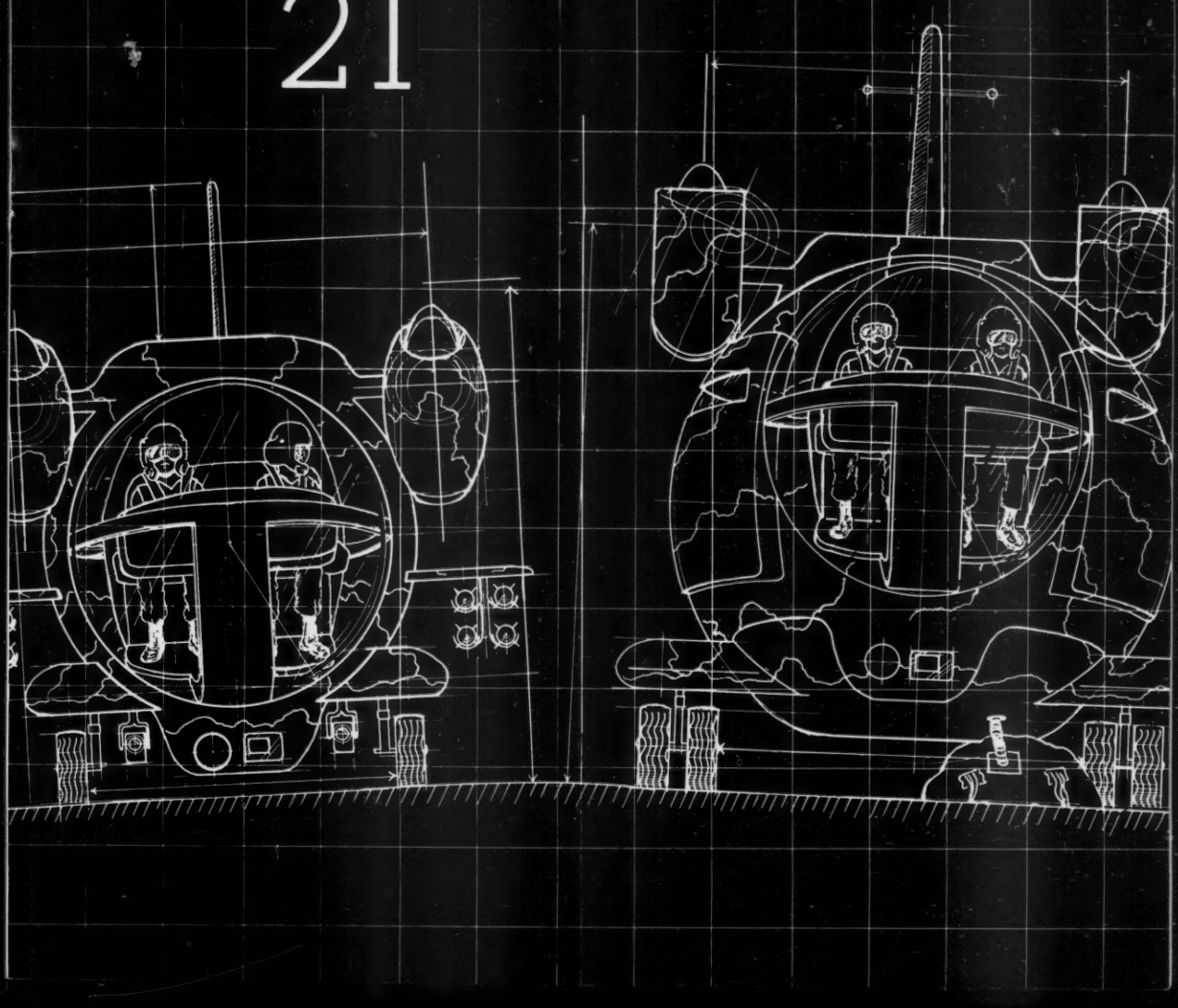
UNITED STATES ARMY
AVIATION DIGEST
DECEMBER 1984

ARMY 21



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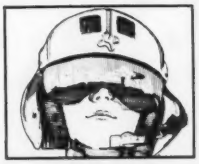

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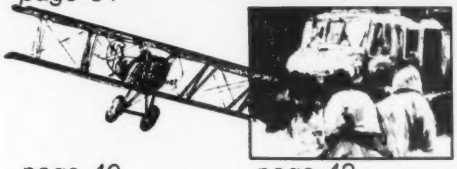

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The mission of the *U.S. Army Aviation Digest* (USPS 415-350) is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, Aviation medicine and other related data.

The *Digest* is an official Department of the Army periodical published monthly under the supervision of the commander, U.S. Army Aviation Center. Views expressed herein are not necessarily those of the Department of the Army nor the U.S. Army Aviation Center. Photos are U.S. Army unless otherwise specified. Use of the masculine pronoun is intended to include both genders unless otherwise stated. Material may be reprinted provided credit is given to the *Digest* and to the author unless otherwise indicated.

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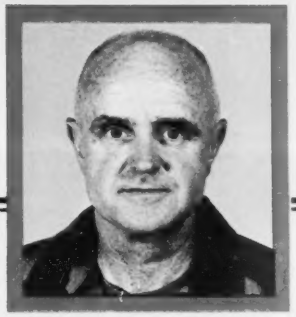
This publication has been approved by the Secretary of the Army, 6 January 1984, in accordance with Army Regulation 310-1. Second-class postage paid at Daleville, AL, and additional mailing offices.

Active Army units receive distribution under the pinpoint distribution system as outlined in AR 310-2. Complete DA Form 12-5-R and send directly to CDR, AG Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220. For any change in distribution requirements, initiate revised DA Form 12-5-R.

National Guard and Army Reserve units under pinpoint distribution also should submit DA Form 12-5-R. Other National Guard units should submit requests through their state adjutant general.

Those not eligible for official distribution or who desire personal copies of the *Digest* can order the magazine from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Annual subscription rates are $26.00 domestic and $32.50 overseas. POSTMASTER: Send address changes to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.



Major General Bobby J. Maddox
Chief, Army Aviation Branch

Aviation Center Training Expansion

THE UNITED STATES Army Aviation Center is feeling growing pains of increased student production, professional development, doctrinal development, force modernization and expanding roles as a central member of the Combined Arms Team. The fielding of new systems to include the AH-64 Apache, OH-58D Kiowa and CH-47D Chinook, plus the addition of the AH-1 Pilot Night Vision System (PNVS) surrogate trainer have generated the need for new support airfields (basefields). The Aviation Center has developed a resourcing plan to accommodate this expansion.

Shell Army Heliport was reopened this month to begin the major expansion of the Aviation Center's training resources. Not used since the Vietnam era, Shell will accommodate the stationing of the TH-55 Osage training fleet for initial entry flight training. This change will also result in consolidation of all attack and aeroscout activity at Hanchey Army Heliport.

Likewise effected in the stationing is the UH-60 Black Hawk, recently moved to Lowe Army Airfield to combine our utility resources; similarly, the CH-47 completed its move to Cairns Army Airfield, to combine our medium lift training. The instrument training and fixed wing training will continue to be served at Cairns.

This resourcing allows for future expansion and provides our training battalion commanders better management and command and control. Each battalion (see page 39) is now oriented toward its combat training mission: attack/aeroscout, utility and medium lift training.

These changes are the Aviation Center's first realization of training facility expansion in a number of years. The immediate future provides for three new stagefields and a complete reorientation of our training airspace.

Army Aviation's Concept for ARMY 21

Major Marion J. Tyler
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Fort Rucker, AL

With an army inferior in numbers, in cavalry and artillery, a commander must avoid a general action. He must make up the deficiency in numbers by rapidity of movements; want of artillery, by the nature of his maneuvers; inferiority of cavalry, by the choice of positions. In such circumstances, the morale of the soldier is a great factor.

Napolean, Maxim No. 10

Army 21 is a term that lately is increasing in usage, without proper definition or understanding, to encompass any concept relating to the future battlefield. This article properly defines the terms of the idea and enlightens the Aviation community about its functional area concept.

The rationale behind the Army 21 concept is to develop a viable vehicle with which to guide future organizational alignments, doctrine, training and materiel requirements. The timeframe for this vehicle is considered to be the years 2000 through 2015. Army Aviation's concept for the future is based on the evolution of doctrine.

The Aviation Center at Ft. Rucker, AL, has been involved in the development of Army 21 since its inception as AirLand Battle (ALB) 2000. The reason for the change in name, from ALB

2000 to Army 21, was because people were mixing the ALB 2000 concept with ALB doctrine. Army 21 is a radical change from the linear battlefield previously envisioned. The essence of the concept is a style of waging war in which agility, deception, maneuver, and firepower are used to face the enemy with a succession of dangerous and unexpected situations happening more rapidly than he can react to them. This will be addressed in detail when the Army 21 concept is published later this year. However, to allow the uninitiated the chance to understand the essence of the concept, certain definitions are required (figure 1). Army 21 envisions three levels of command (figure 2); the land battle force (LBF), the battle task force (BTF), and the close combat force (CCF). The super levels of command are being developed in a joint endeavor called Focus 21. This article addresses the Army Aviation functions within the LBF.

FIGURE 1: Definitions.

Theater Command—Unified or combined commands established by the NCA or by alliance agreements.

Multiservice AirLand Force—A permanently organized force with capabilities similar to those of today's rapid deployment joint task force.

Army Component-Land Battle Force—The Army component of the multiservice ALF integrates, directs and conducts the land battle.

Battle Task Force—The BTF is a tactical C^2 headquarters only.

Close Combat Force—The CCF is the basic tactical organization that conducts close combat.

Aviation For Army 21

Army Aviation consists of all aerial platforms employed on the Army 21 battlefield, including both manned and unmanned aerial platforms. They enable Army Aviation to perform combat, combat support (CS), and combat service support (CSS) missions as a maneuver element of the combined arms team. The mission of Army Aviation pervades all mission areas in performing a wide variety of battlefield tasks and functions. Army Aviation rapidly deploys to find, fix, and destroy enemy ground and aerial forces through fire and movement. In this regard, Aviation assets provide the same capabilities as today, but with greater versatility. To achieve this, Aviation units in Army 21 are designed to facilitate their quick attachment to other units. This requires them to be consistent in numbers of people and equipment throughout the force structure. These organizations will:

- Be small, and high technology intensive.
- Possess the sufficient command, control and communication (C^3) and CSS to perform independent or sustained operations as part of a combined arms force.
- Be structured with the people and equipment needed to operate continuously for 3 to 5 days on all types of terrain and in all weather and battlefield environs.

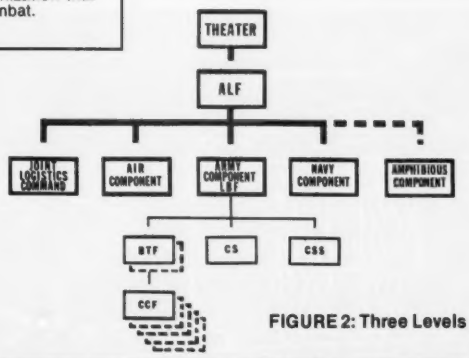
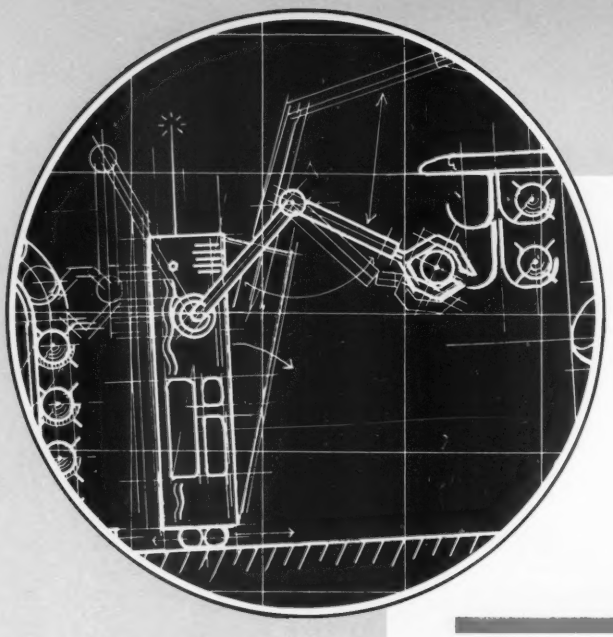


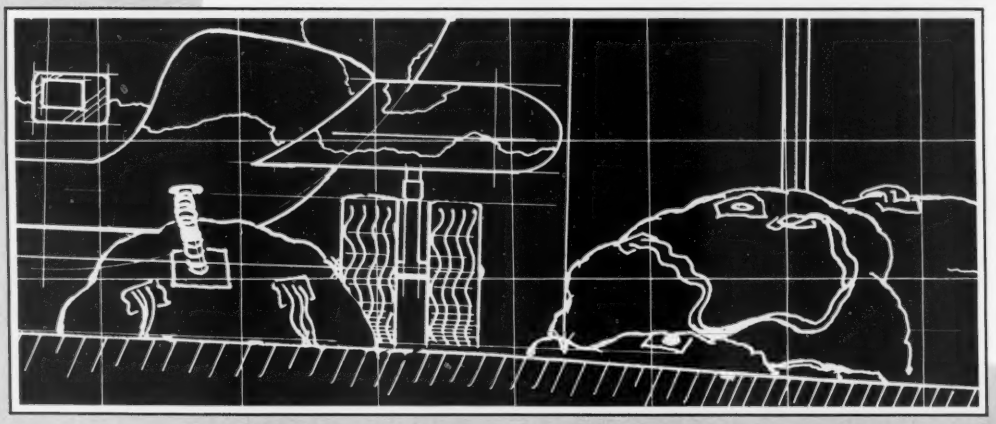
FIGURE 2: Three Levels of Command.



Aircraft Sophistication

Aviation equipment will provide the occupants and vital aircraft components protection from nuclear, biological, chemical (NBC), directed energy, and ballistic hazards. The aircraft themselves will not present a unique signature, and will have a multifuel capability common to other units in the force. Our manned aerial platforms will have a "look ahead" sensing capability using satellite data link for lookdown contamination detection. All aircraft systems will be simple to operate, be maintained by the crew, and use modularization to enhance defective component replacement. Robotics will be used for rearming while onboard pumps will eliminate the requirement for forward area refueling equipment.

Disposable sealed fuel bladders with presampled fuel will be preplaced in the forward area. The crew will fly to a previously given set of coordinates, break the seal, connect the bladder to the aircraft and let the aircraft draw the fuel onboard. Armament pods are dropped and attached using onboard equipment. The anticipated continuance of low technology aircraft that also will be on the battlefield of the next century requires a unique approach to both the use and the maintenance of a high-low mixture of aircraft in the force. This will be accomplished through feed forward controls in planning future force structuring and the use of



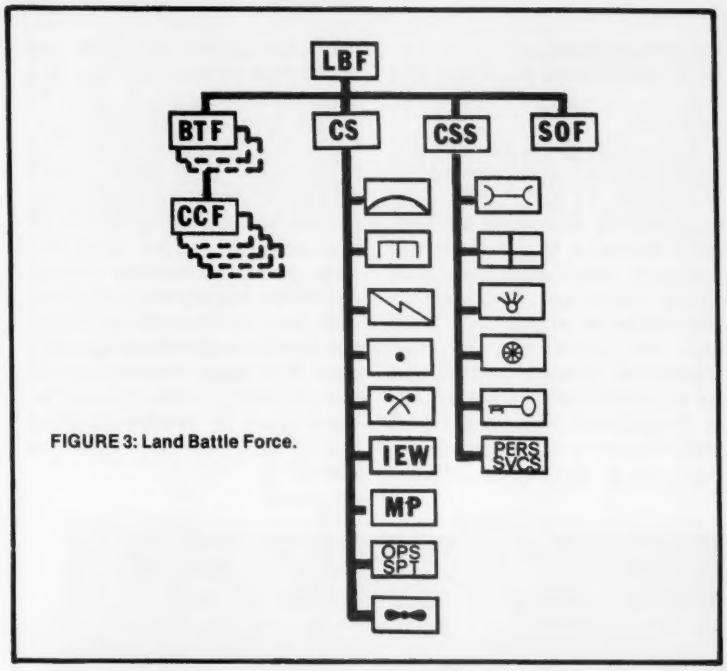


FIGURE 3: Land Battle Force.

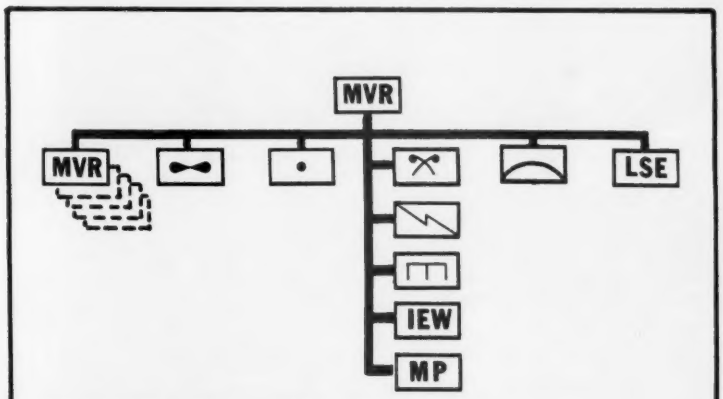


FIGURE 4: The Close Combat Force Concept.

multitudinous contact teams working under a two-level maintenance concept to reduce the support requirements under austere conditions.

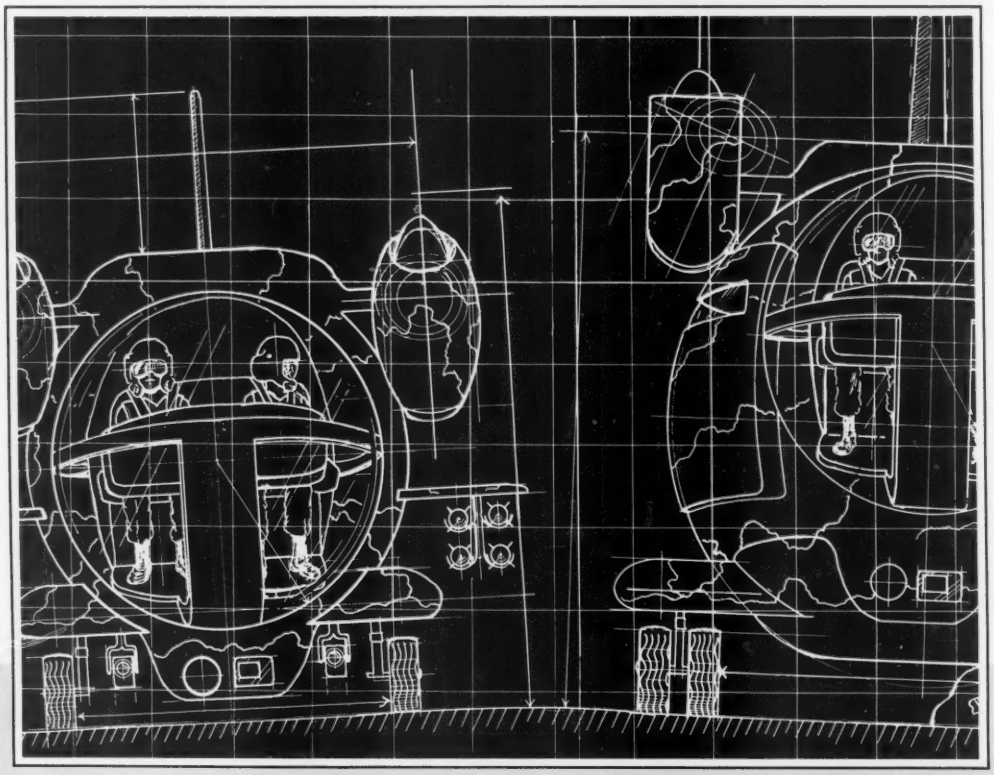
Force Characteristics

Aviation units will be organized to facilitate quick attachment to other Aviation units. As noted this is accomplished by a consistency in the numbers of people and aircraft throughout the force structure. The similarity in design allows the LBF or BTF commander the latitude to task organize for the mission by whole units, thus maintaining the unit integrity and leadership continuity so essential to mission accomplishment. Aviation assets at the LBF level are consolidated into the Aviation close combat force (figure 3). This CCF provides attack, reconnaissance, utility, aerial exploitation, command and control (C^2), lift, and Aviation maintenance capabilities to the LBF. Since the battlefield is organized indepth and the maneuver units will orient on the enemy rather than on terrain, close combat is predicated on the maneuver of highly mobile, mission-sufficient combat forces. To this end, each close combat force has its own Aviation assets (figure 4).

Close Combat Force Aviation

These assets consist of units of attack, reconnaissance, and utility aircraft and they are consistent in the number of aircraft assigned to each Aviation unit. The attack and reconnaissance units will have the same airframes in each. The type of peripheral equipment mounted on them will be the delineator. If, per chance, the mission calls for additional attack aircraft not available from the LBF, the reconnaissance airframes can have their intelligence gathering equipment demounted, have attack equipment mounted and then be capable of a limited attack role.

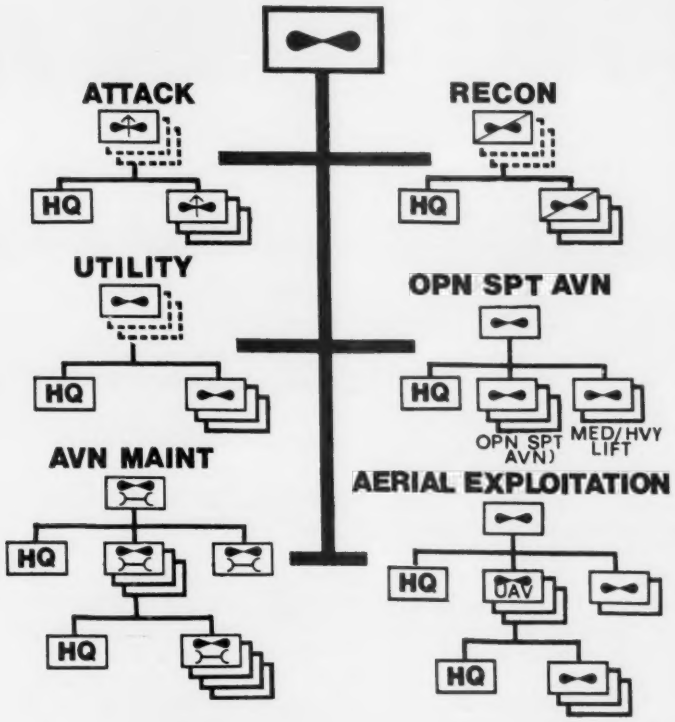
The utility units contain aircraft that provide for aerial maneuver of ground forces; engineering and mine warfare; and CSS tasks, to include battle support, reconstitution, and force movement. The aircraft maintenance at the CCF level will be performed by the flightcrew. This will be provided for by the aircraft system's built-in diagnostic equipment and redundancy for continued operation in a degraded mode. Modularization will allow the flight crew to isolate a fault to a specific component or card. No major assemblies (engines, transmissions, etc.) will be replaced at CCF level. These components will be reliable and provide the crew with an advanced indication of failure. Onboard data recorders monitor system condition trends and interface with the maintenance facility at the LBF for real-time diagnostic data. Any major repairs beyond the capability of the crew will be conducted by mobile contact teams sent forward from the LBF.



Battle Task Force

The BTF has a small Aviation staff that is capable of planning and coordinating Aviation operations for its assigned close combat forces. The BTF commander (one of the LBF deputy commanders) and his staff will use the Aviation assets provided from the LBF Aviation CCF. This Aviation staff is capable of assuming control of the attached Aviation assets as necessary.

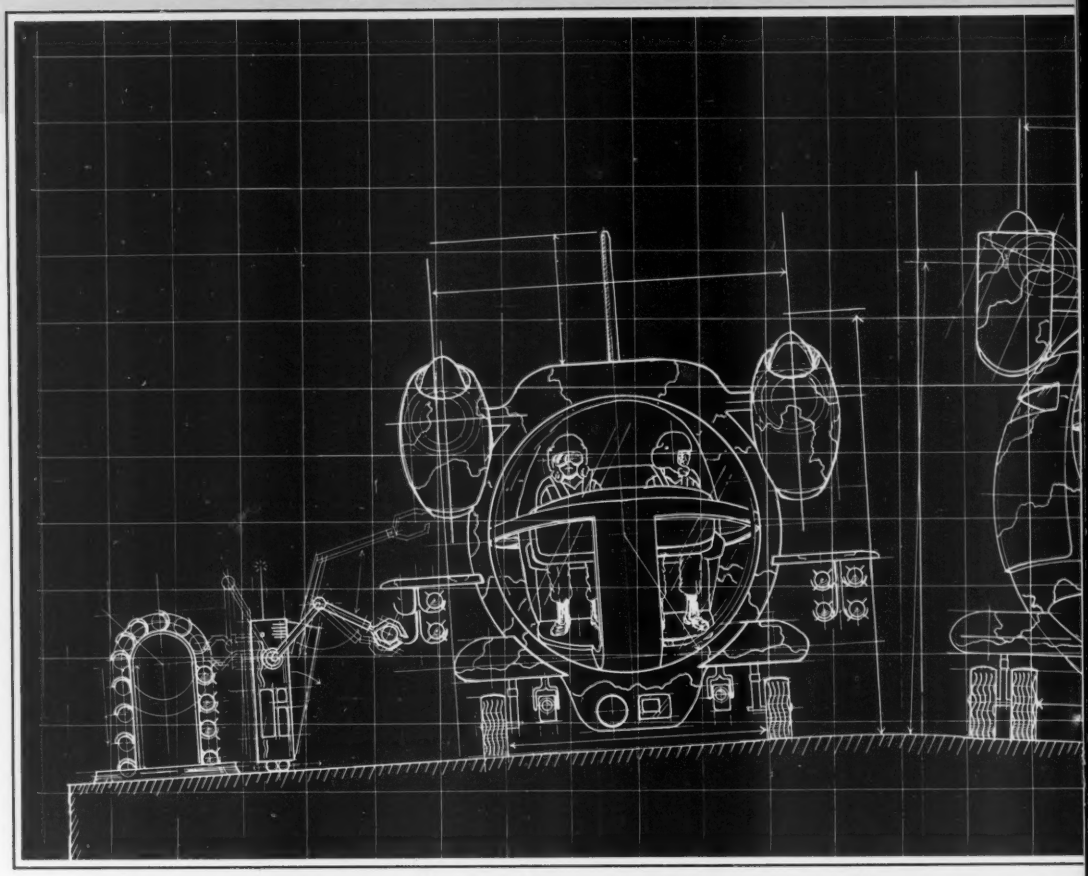
FIGURE 5: Land Battle Force's Aviation Assets.



Land Battle Force's Aviation CCF

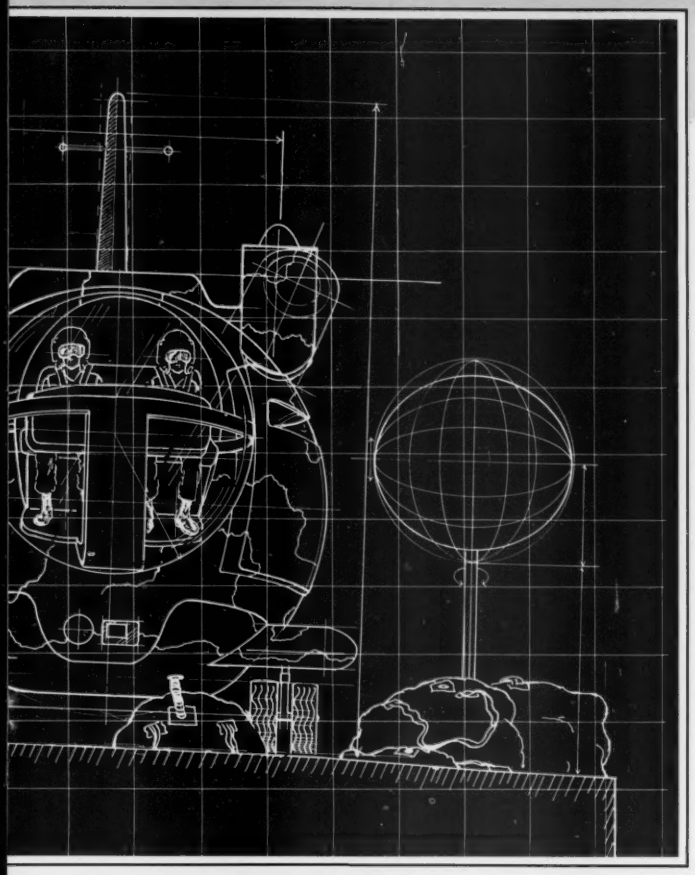
The LBF Aviation CCF (figure 5) performs combat, CS, and CSS missions. This CCF includes units of attack, reconnaissance, utility, general support, aerial exploitation, and Aviation maintenance. The consolidation of the land battle force's Aviation assets above CCF level allows for unity of command, immediate response and the requisite task organizing capabilities to fit the situation. This consolidation also maximizes the commander's span of control while allowing for optimal commitment in the most cost effective manner.

Successful combat operations demand that the CCF move fast, strike hard, and finish rapidly. Army Aviation is a key implement with which the commander extends his capabilities in each close combat task of Army 21. By the consolidation of aerial platforms, the targeting becomes rapid and highly effective. Additionally the LBF commander needs only to direct one commander for the aerial impetus of his campaign.



Aviation Equipment

The aircraft and equipment used by Army 21 Aviation units provide protection from NBC, directed energy, and ballistic hazards. These aircraft will have a multifuel capability, able to use either Aviation fuel or ground vehicle fuel. And this capability will be common to all aircraft. Data linking manned aerial platforms will have the ability to look ahead for radiation and chemical detection. All aircraft have a common airframe for simplicity of design and maintenance while maintaining diverse capabilities depending on the equipment attached to the airframe. The type equipment will determine the type unit, be it attack, recon, aerial exploitation, etc. Rearm, refuel will be conducted via robotics, and communications will be totally automated allowing for hands-off usage. Aircraft will have built-in diagnostic equipment and through modularization will be maintained by the crew. No major assemblies will be replaced at the unit level but rather at the LBF.



Technology For The Future

The Army 21 concept requires technologically superior systems to ensure the capability to fight anywhere, anytime, and win. Aircraft will use artificial intelligence for self-diagnostic capability. Robotic support equipment will facilitate combat support operations. Advanced weapon technology will enable weapons to automatically prioritize, aim and engage through an onboard system. Missiles will be true fire and forget, and will employ multipurpose warheads and seekers to attack armor, air defense, or airborne targets.

Communications will operate on millimeter wave and optronics, spread spectrum, frequency hopping, and high speed data processing. Data linkage will include the use of space placed platforms for immediate relay of communication, intelligence, and topographic representations. Space applications enhance navigation to provide 2 to 5 meter circular error position accuracy while the use of composite materials and associated manufacturing techniques reduce weight, increase strength, and decrease cost without dependence on exotic materials. Advances in propulsion will be incorporated to permit high temperature operation. In addition, redundancy is maximized and reinforced through modularization and commonality.

In summary the Army of the future will have the capability to:

- scan the battlefield,
- swarm to the areas of influence,
- strike with the requisite mass, and
- scatter before the enemy can respond.

Army Aviation is well on its way toward achieving these objectives through the numerous and diverse endeavors currently being developed. Army 21 is not a final product, but will be updated in response to the latest technological forecasts, threat assessments and mission definitions. This will allow a premising document to be reviewed semiannually at the general officer level. As a result of the general officer review panel the document will be developed in detail and furnished as a guide for the communication of new ideas with industry. It will provide industry with a clear picture of the combat user's needs and requirements. ■

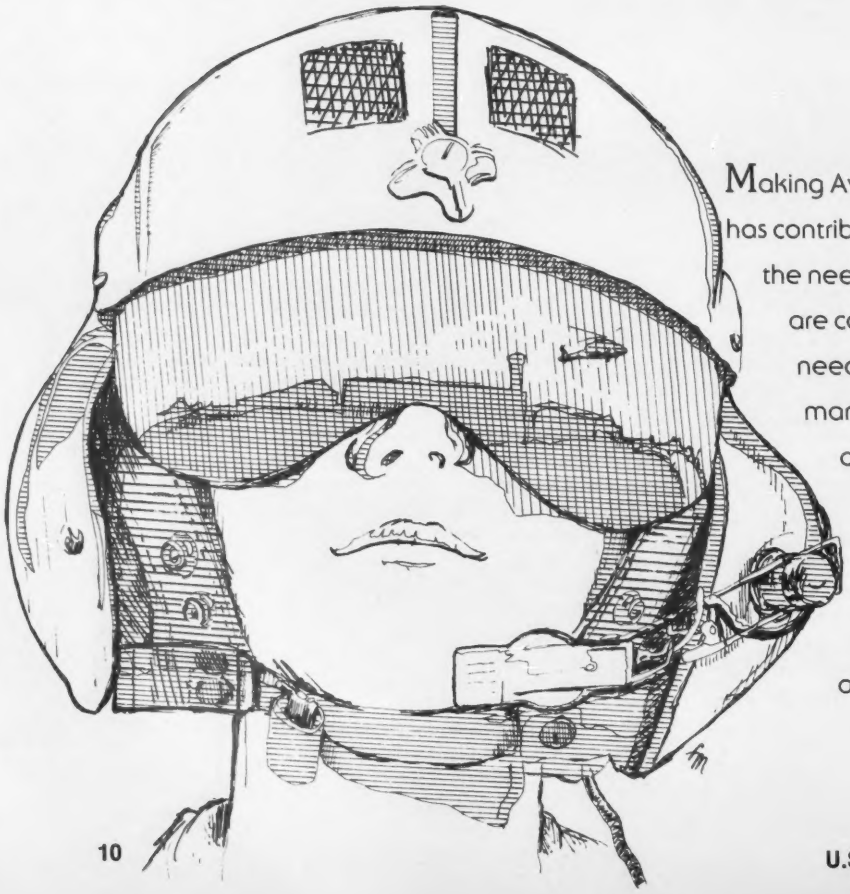
CHALLENGES for the AVIATION

IN EARLY 1983, while stationed at the United States Military Academy (USMA), I was approached by one of my students who said happily, "Sir, did you know Army Aviation is going to have its own branch?"

Having been a party to this rumor numerous times during the last decade or so, I assured the cadet (with all-knowing authority) that what he had heard was mostly talk, without much action expected in this century. After all, this issue of an Aviation Branch would never be permitted by the Air Force, let alone by our own U.S. Army leadership.

My credibility as a source of information on Army Aviation was diminished considerably when the Secretary of the Army signed, sealed and delivered the new Army Aviation Branch in April 1983.

Considering the period of time I was "away" from Army Aviation developing my other speciality, I have managed to rationalize my ignorance of perhaps the most significant personnel change in the U.S. Army for many years. However, this monumental change has prompted me to reflect on what lies ahead for Army Aviation, given its new branch status. I am very optimistic about the opportunities, but at the same time concerned with the maintenance of the image and effectiveness of the Aviation Branch.



Making Aviation a separate branch has contributed much to ensure that the needs and desires of aviators are considered. We as aviators need to work in a professional manner, set a good example and accept the challenges that the newly acquired Aviation Branch status presents. Yes, Aviation is a fully capable combat arm, and we must prove it!

BRANCH

Lieutenant Colonel James B. McKenzie Jr.
Joint AirLand Staff Officer
AirLand Forces Application Agency
DCS Doctrine/HQ TRADOC
Langley AFB, VA

As far back as I can remember, Aviation and aviators have been plagued with image problems. I never concerned myself much with these image problems while I was serving in Aviation assignments. The only times image was a topic was when I served outside Aviation. Those outside Aviation have a tendency to see us with "white scarf blowing in the breeze" while professing a "devil may care" attitude. Or to put it bluntly—displaying a lot of flair and flamboyance without much substance. (Their words, not mine!)

The subject of flight pay falls into the same category as the scarf. This dashing display image used to describe the perceived image of aviators is reflected in the big watch and expensive car jokes. How many times have you and I had long and tedious "happy hour" discussions justifying the receipt of flight pay while not serving in a flight assignment? These image problems will most likely follow us around for a long time. The symbols associated with our image are often at the root of interpersonal problems that can be solved through conversation and education with those unfamiliar with Aviation (e.g., "Gee, you're an aviator—you sure don't act like one"). Now, I can assure you I do not stay up nights worrying about these relatively minor image issues. However, I do become concerned when impressionable future officers (USMA cadets in this case) relate horror stories describing the behavior of aviators they have been associated with during summer duty. The behavior the cadets describe is of the letter of reprimand or Article 15 variety. The instances are few and are probably just as prevalent in the other branches, but when coupled with the scarf, big watch and pay benefits, they do nothing to help our image. As we embark on our new branch status, we certainly do not want to portray ourselves as an undisciplined and unprofessional collection of misfits. Clearing our ranks of these "bad actors" should have high priority. Otherwise, we will probably get what we pay for in terms of those attracted to Army Aviation.

An equally serious image problem is linked to our expertise outside Aviation. From a professional viewpoint, some of us had to really fight to get a command in our basic branch. Some felt we were not capable of handling these commands since our backgrounds were predominately in Aviation. When we finally did get those opportunities, often the commands were of the headquarters variety or in the table of distribution and allowances arena. These commands were certainly not easy nor less challenging, but they were considered insufficient for the necessary branch qualification. I would expect that selections of the more desirable staff positions were conducted in the same manner—"An aviator as my S3! You have to be kidding."

However, a partial solution of this image problem related to expertise has been instituted. We will still have to seek command but the commands will be within Army Aviation. For years we have been telling those in charge that our careers were different and therefore should be managed differently. We wanted a branch receptive to our personal needs and one that understood our idiosyncrasies. Well, salvation is here. In my case, I officially branch transferred to Aviation in December 1983.

Strangely enough, it is our newfound opportunity—the ability to remain in our branch—that worries me. If we are not extremely careful in the near term, we may face even greater problems than before. The creation of the branch has been a positive step in the career development of Aviation personnel. It has also done much to solidify proponency issues. However, this type of specialization brings with it certain limitations.

In the past, decentralization of our assets was complicated and difficult and misuses of people and aircraft were not uncommon occurrences. Through the use of an "insider" to get the user of our assets back on the straight and narrow we were able to reconcile some of these difficulties. Some of these difficulties stem from different battlefield perspectives which caused us to see the battlefield as wider and deeper than did the other arms. Wider and deeper translates into problems with refueling, rearming, maintenance, weather, flying hours, crew rest, etc.

Our insider frequently was able to explain, to the ground commander, the perspective and associated problems with Aviation assets and this explanation contributed to a better plan for mission accomplishment. Unfortunately, within the next decade

the insider, who is/was the Infantry company commander, the Armor battalion S1 and division Artillery AS3, will go the way of obsolete aircraft. He spoke two languages—Aviation and basic branch—and was that same aviator who bounced back and forth between branches. As the Aviation Branch reaches institutional maturity, that person will only be a memory.

We will continue to garner inservice branch accessions at the rate of 15 percent of the annual commissioned input. They will bring with them their branch expertise. However, can we expect these soldiers with less than 4 years commissioned service (a current constraint) to fill the void of a 7- to 8-year veteran? To benefit fully from our new organization, we need to emphasize ideas that highlight our expertise and serve to encourage our participation with ground forces.

The Aviation Branch and all the professionals therein need to make the first gesture toward preventing isolation. Our separate branch status could inadvertently exclude us from decisions that require insights concerning Army Aviation. We cannot afford to become so specialized and centralized that we lose our responsiveness, effectiveness and interaction with the ground forces.

We must literally go out and drum up business. Since our insiders will be disappearing slowly, steps must be taken now, out of our own assets, to ensure proper liaison is maintained through existing and new channels. These channels can be as simple as commander-to-commander relationships. Our junior aviators can be sent to other advanced courses and other branch officers to ours. This is certainly not a revolutionary concept since the Army has seen fit to crosstrain selected officers for years; but it's something we need to actively monitor and encourage.

We might also consider permitting inservice Aviation accessions beyond the 4-year commissioned point. These people can be a valuable asset in terms of their branch expertise. To instill our ideas and doctrine, we must also continue to have quality people assigned to all branch schools as faculty and Aviation representatives. To properly communicate our roles and missions and act as advisors to the service schools, these selected officers and enlisted people should represent the best we have to offer.

Second specialty development is another avenue that needs to be fully explored. Second specialty assignments should not amount to just another Aviation position under a different name. Rather than limit ourselves, we need to continue to gain broad bases of experience through assignments unrelated to Aviation.

We need to prove that we work just as professionally in all assignments we undertake, not just those that require operational flying. Aviators are needed to sell and inform in the Reserve Officers Training Corps, Recruiting Command and other positions.

The table of organization and equipment field army, though, is the arena that needs the cross-pollinization. For example, can

"What Do You Mean I'm Not in the Aviation Branch?"

CW4 Mark O. Wrinn, Aviation Warrant Officer Senior Course

THERE I WAS, winter of 1966, bebopping down main street when a flash of blue and green caught my eye. I was in front of the Army recruiting office and there was a beautiful poster depicting one of those new "skinny jet helicopters" diving out of the sky like a vengeful eagle.

we convince an Armor battalion commander to take an aviator as part of his staff in personnel, operations or logistics specialities? This might happen if we reciprocate. Otherwise an Armor officer will be shorted a staff opportunity in his or her other specialty. Here is an opportunity in both cases to use those officers who attended other branch schools. A more intensive use of the correspondence course program could aid in filling the void created by nonattendance at the resident course. A variation of this proposal is when we send our field grade graduates to other service schools on joint assignment tours.

We should use every opportunity to seek forums at the installation and national level through agencies such as the Association of the United States Army, the Infantry Association, Armor Association, et al. We should get on these organizations' professional programs and show our wares and ideas to spread our influence and story throughout the Army. Similarly, we should invite them to our gatherings (such as Army Aviation Association of America), to not only listen, but to give them the opportunity to project their ideas and branch-specific needs. We should seek out our prospective consumers and let them know our product is alive and well, that the product has not really changed—only the packaging and the label.

The concern with crosstraining should not be viewed as a return to the status quo. Our doctrine stresses that we fight better when we are employed in conjunction with other forces. The more we know about our teammates and work with them the more enhanced is our capability and teamwork. Given the current tactics of opposing forces, we cannot realistically win the battle alone nor can the other individual team members. LTG James B. Vaught, U.S. Army (Retired), and friend of Army Aviation, put it best when he wrote, "It is very important that the Aviation Branch demonstrate its capability as a fully capable combat arm. If not it will be considered as a last resort—specialized gap filler."

Admittedly, I have not addressed the nonpeople issues associated with proponency. Where we locate our aircraft, who has control of the aircraft and who has ultimate responsiblity for doctrine is important. Our aircraft and manuals will serve us well but people will still be the key, as only they can operate and employ them.

These few ideas should not be interpreted as second guesses of what has transpired organizationally, but they are offered for your consideration. Consequently, there are some things yet to be done in the Aviation Branch, and we should not hesitate in taking on this particular challenge promptly. Besides, who loves a challenge more than those associated with Army Aviation?

Remember, our motto "Above the Best" means that we are *flying above and supporting the best soldiers in the world.* What we need to do is to continue to remind them we are still circling above and we will be there when they need us.

"Learn to Fly" was emblazoned across the top. The fine print below said, "If you're a high school graduate, you can fly in the Army." I read no further and ran inside to talk to the man behind the sign. He assured me that the poster spoke the truth and that when I finished high school (I had 7 months to go) and I passed a flight physical and some written tests I could go to Army flight school. He also mumbled something about being a warrant officer when I finished flight school. I knew what a truant officer was but warrant officer was a new one on me. Oh well, it didn't matter anyway, I was going to be an aviator.

About a year and a half later, I pinned them on, Army aviator wings. I had made it. They gave me a little gold bar with a couple of spots on it too.

Six months later I was in the 282d Assault Helicopter Company in the Republic of Vietnam. I was one of a motley group that consisted of one major, two captains and three dozen assorted lieutenants and warrant officers flopping around the sky defending freedom. Army aviators, one and all. Cong killing, copter flying, chopper pilots. We were "air assault" all the way!

One year later in Korat, Thailand, my bubble burst. A captain buddy and I were sitting around the bar discussing our next assignments. He said he was going to an Infantry company at Ft. Carson, CO. I said, "Oh yeah! What will you be flying there?"

He pointed to his Infantry Branch insignia and explained that it was a ground assignment and he would not be flying. I stared in horror at his crossed rifles and

then at his wings. "They can't do that to you. You're an aviator!" But, they could and they did. I finally found out what a warrant officer was and what the significance of the different branch insignia was. Warrant officers could grow in Aviation and commissioned officers could *not*.

A post card arrived shortly after that, stating that I too could be a lieutenant in the Infantry. "No way," I said, the Army was my career, but Aviation was my chosen field.

Well, I grew and I flew. My assignments took me back to Vietnam; Thailand; Ft. Sill, OK; Europe; and Ft. Campbell, KY. My Army aviator wings sprouted a star and the star sprouted a wreath. There isn't any more room for spots on my bar. I have always had a healthy respect for my fellow soldiers and what they do, and considered myself a member of the combined arms team. I have often thought how much better off Army Aviation would be if we had some full-time leadership.

I'm not the kind of guy who spends a lot of time worrying about what the "big-wigs" in Department of the Army are doing. But, I did get the word that there was going to be an Aviation Branch. "Great!" I thought, better late than never.

I got busy again concentrating on the flying end of the air assault concept and lost track of what the paper shufflers were doing. I caught a bit of conversation here and there between commissioned officers about who was selected for the Aviation Branch and who wasn't. I always smiled to myself a little, thinking how I'd been in the Aviation Branch from day one. Army Aviation publications were full of information about the new branch and the new schools that were being started. There were so many new offices associated with the formation of the new branch, I expected Ft. Rucker to be bursting at the seams. There was a lot of excitement and it was understandable. Commissioned officers were finally going to get to join us warrant officers in the Aviation Branch.

Little did I know that my bubble was again about to burst. My unit had been selected as AAAA (Army Aviation Association of America) unit of the year and General John W. Vessey Jr. was coming to our dining-in to congratulate us. The telephone lines between Ft. Campbell and an aviator shop near Ft. Rucker were red hot with people placing orders for shoulder boards with the new branch colors. The big burst came when I asked the lady at the shop to send me some shoulder boards in Aviation blue with CW4 bars on them. There was a hesitation on the line and then she said those horrible words, "Warrant officers aren't in the Aviation Branch."

I could not believe my ears, but she repeated it again.

I was shocked!

I called everyone I knew who might prove her wrong, but it was useless. I could not get a straight answer. It looked as if, after 16 years, I had been thrown out of the Aviation Branch.

Come on guys, warrant officers have been the closest thing we've had to an Aviation Branch since we split with the boys in blue. To build an Aviation Branch without Aviation warrant officers is like building a house without a foundation. To say that warrant officers are members of the branch but are not allowed to wear the insignia puts us in the category of unwanted stepchildren.

I know that some of my fellow warrant officers feel that the warrant officer rank might somehow be diminished by pinning on the Aviation Branch insignia. I don't understand how this could be true. We could proudly display our warrant officer rank on our right collar and our Aviation Branch on the left. Instead we display right collar warrant officer insignia and left collar warrant officer insignia. Who needs a squashed bug anyway? Everyone with spots on their bar is a warrant officer. Displaying it on both collars is both verbose and redundant.

The way I see it, the Aviation Branch is here to stay. The future of Army Aviation and Army aviators, both commissioned and warrant, is with the Aviation Branch. So isn't it about time that all aviators proudly wear their rank and Aviation Branch insignia?

FIRST AEROSCOUT ENLISTED GRADUATES

Members of the first-ever Enlisted Aeroscout Observer Course graduating at Ft. Rucker, AL, 2 November, are, from left: SP4 Wayne C. Welsh, SP4 Andrew D. Drengson (Distinguished Graduate), SGT James L. Cox, SGT Anthony E. Robinson, PFC Eric A. Bridges, SGT Robert L. Voelkel, SP4 John B. Coes and SP4 Timothy R. Schoning (Honor Graduate). All are members of the 6th Cavalry Brigade at Ft. Hood, TX. (Photo by Al Endicott)

FIRST AVIATION OFFICERS' ADVANCED COURSE

Left to Right
Bottom Row: CPT Robert H. Lee, CPT Harold C. Walker, CPT Mario H. Acevedo, CPT William Boltralik, CPT David Richards, CPT James W. Daley, CPT Miguel Alfaro (class leader), CPT Don S. Cornett, CPT Robert A. Childers, CPT Richard M. Bega, CPT Daniel Barreto, CPT David S. Smith, CPT Steven M. Mahoney

2d Row: CPT Joel T. Payne, CPT Richard L. Polczynski, CPT Mary L. Seay, CPT Robert M. Maiberger, CPT Mark D. Julian, CPT Kirk A. Boothe, CPT William Gaul, CPT Gerald A. Carroll, CPT Michael R. Caram, CPT Samuel J. Kindred, CPT Kathryn L. Bystrom, CPT James T. Gaetjen, CPT Earl M. Yerrick

3d Row: CPT Mark E. Valentine, CPT James T. Brockway, CPT David O. Odegard, CPT Tim E. Perley, CPT David A. Cox, CPT Benjamin F. Adams, CPT Michael R. Higgins, CPT Joseph L. Flynn, CPT Thomas P. Driscoll, CPT Joseph P. Rears, CPT Clarence D. Johnson, CPT Richard E. Talley, CPT Ted N. Poulakidas

4th Row: CPT Robert P. Wentzel, CPT Joseph W. Sabelhous, CPT Gary A. Skubal, CPT Tony S. Seay, CPT Paul E. Nagy, CPT Walter R. Moss, CPT Charles P. Roe, 1LT David W. Wallace, CPT Jesse D. Kreinop, CPT Donald Maciejewski, CPT Donald G. Dunkerson, CPT Michael E. Krueger, CPT Clarence A. Stiehm, CPT Joseph I. Moore, CPT Ronald J. Heckler

5th Row: CPT Raymond E. Rippel, CPT Timothy P. Souder, CPT Vance C. Riggs, CPT Lindell M. Weeks, CPT Daniel B. Mack, CPT James E. Braman, CPT John C. Donahue, CPT Berkley B. Adams, CPT Robert H. Drumm, CPT Israel Delgado, CPT Kenneth L. Buholtz, CPT Mark A. Mansir, CPT Derwood Willhite

Not Shown: CPT Lindsey R. Brewer, CPT Steven M. Keller

Flight Into Instrument Meteorological Conditions

U.S. ARMY SAFETY CENTER

"I WILL NEVER PUSH WEATHER again as long as I fly!" That vow was made by a civilian pilot who had inadvertently flown into instrument meteorological conditions (IMC) but was lucky enough to survive and talk about it.

He took off on the final leg of a cross country VFR flight after a 3-day delay due to weather. He intended to follow the coastline and was prepared to stop at any of several airports en route to his destination if weather required it. When he suddenly ran into IFR conditions he was a few miles from a major airport. There was an extremely low ceiling and visibility was restricted to less than a mile. He was 125 yards offshore, flying at approximately 50 feet and he was afraid to turn farther seaward because he might lose sight of the white line of breakers he was now following.

He flew through the terminal control area under IFR conditions, in fog. He knew he was breaking FAA rules but he was still afraid to turn out to sea. "Surely the weather ahead would get better"—but it didn't.

Now he was approaching a restricted military area. The ceiling was still no more than 300 feet and visibility was only 2 miles. He elected to remain at 75 to 100 feet, forcing him to move several miles offshore.

He got past the restricted area and was able to follow the breaker line to his destination airport where luckily weather conditions had improved allowing him to make a normal VFR landing.

The number of mishaps from inadvertent flight of Army aircraft into instrument meteorological conditions has been reduced in the past few years. However, when such mishaps do occur the cost is extremely high, in aircraft destroyed and people injured and killed.

The sudden and unexpected transition from VFR to IFR can cause disorientation and panic leading to further mistakes from which the aircraft never recovers. Even an experienced, instrument-rated pilot can be overtaxed to bring the aircraft and crew through safely. If the aviator has failed to maintain high proficiency in instrument flying, the chances are even less. Pilots who fly VFR into marginal weather conditions, expecting weather to improve, are gambling in a high stakes game with the deck stacked against them.

Judgment

An error in judgment that leads to loss of an aircraft and crew may be made by the pilot or it may be made further up the chain of command. Tragically, the results are the same.

The pilots of a flight of AH-1Gs had been informed that the weather at their destination airport was VFR. They were told, however, that a mountain pass they expected to use might not be open due to cloud cover.

There appeared to be a sense of urgency among the crews to take

off because of congestion caused by the large number of aircraft on the ramp. The flight leader decided to try the pass. Ceiling and visibility began to decrease shortly after takeoff and the mountain tops were soon obscured by low clouds.

The flight leader had had some reservations all along about the weather but he had chosen not to say anything. Now he announced over the radio that the weather was deteriorating and he didn't think they were going to make it through the pass. But when the platoon leader replied, "let's go a little bit further," he elected to follow those instructions instead of telling the flight to turn around.

A minute later two of the aircraft broke formation. The lead aircraft, with the copilot at the controls continued on and shortly entered IMC. The PIC, flying in the gunner station, took control of the aircraft. His attempts to level the aircraft and initiate a climb were not successful and he lost control of the aircraft. The Cobra came out of the clouds in a nose-down attitude at approximately 50 feet agl, at a high rate of descent, and impacted the ground. The aircraft was completely destroyed. The copilot received major injuries and the PIC minor injuries.

Inadequate weather information

An aviation unit was engaged in transporting troops in a combat zone. Early on the morning of the mishap, the crew had received an area weather forecast but had failed to receive a weather briefing specifically for their flight. The weather was less than that required for VFR operations, however, the unit had successfully operated in very marginal weather for 6 months which may have led to overconfidence on the part of the pilot.

Two UH-60A helicopters were on the daytime VFR service mission. When the pilot of the lead aircraft encountered low clouds and ground fog near the head of a small valley he decided to try to get through to the next valley. The aircraft was flying at approximately 100 feet agl when it went out of sight of the second aircraft.

Repeated attempts to contact the lead aircraft by radio were unsuccessful. Evidence indicates the flight crew may have attempted to execute inadvertent instrument flight recovery procedures during which the aircraft struck two trees on a 15 degree upslope, approximately 500 meters after leaving the second aircraft. The Black Hawk impacted the ground on its right side. Four of the ten people on board were killed in the crash.

Supervision and failure to follow regulations

The aviation unit had successfully flown support missions for three days, cancelling on the fourth day because of weather. The commander, who appeared excessively motivated to accomplish his mission, intended to pick up troops at first light on the fifth day.

The unit had made a practice of operating aircraft under VFR during tactical operations even though environmental conditions were less than the minimum prescribed by the regulation for rotary wing aircraft. (Table 4-1, AR 95-1, Army Aviation: General Provisions and Flight Regulations.)

No. 1 aircraft was moved onto the strip to provide for formation lineup of the other four. The aircraft were being repositioned despite the fact that the ceiling was estimated at below 100 feet and visibility was limited by darkness and clouds. The pilots were instructed to continue with the form-up of the flight, then to shut down and wait for more favorable weather.

No. 2 aircraft lifted out of its hover hole, ascended to 20 to 30 feet above 50-foot-high trees where it encountered stratus clouds. The pilot descended to just above tree-top level and proceeded to the strip. As No. 2 maneuvered on the strip, the pilot of No. 5 radioed that he was coming out of his hover hole. The aircraft lifted vertically and headed northeast at tree-top level where it began to enter

Table 4-1 Army VFR Weather Minimums (Uncontrolled Airspace)

Operation	Ceiling	Visibility* RW	Visibility* FW
Daylight:			
Over flat terrain	300	1/2 mile	1 mile
Over mountainous terrain	500	1/2 mile	1 mile
Night:			
Over flat terrain	500	1 mile	2 miles
Over mountainous terrain	1000	1 mile	3 miles

Tactical helicopter training may be conducted on Army military reservations or in other approved tactical maneuver/training areas with the following restrictions:

a. When clear of clouds.
b. At an airspeed allowing visual contact with other aircraft for avoidance purposes.
c. With one-half mile visibility.
d. With ATC clearance when operating in a control zone.
e. With approved vertical helicopter IFR recovery procedures.
f. Aircraft must be equipped for IMC flight and have appropriate avionics.

*As reported or forecast (statute or nautical)

clouds. It climbed 50 or 60 feet above tree tops, in the clouds, paused, turned left and began a descent, picking up airspeed as it went out of sight of witnesses. They heard a loud bang and saw a bright glow. All three crewmembers had been killed when the helicopter crashed on a rising slope, rebounded and hit two trees.

The pilot had tried to make an instrument takeoff from the left seat position. Most of the unit PICs routinely performed their duties from the left crew stations. The UH-1 Maintenance Instruction Manual designates the right crew station as the pilot's position. This is primarily because of the arrangement of flight instruments and switches within the cockpit.

The pilot became spatially disoriented and his apprehension and inexperience in instrument flight, combined with the reduced instrumentation on the left side of the aircraft, may have contributed to his loss of control.

Inexperience and lack of supervision

- A 20-year-old pilot with 250 rotary wing hours, 100 of them in the aircraft he was flying, entered IMC shortly after takeoff from a field site. While trying to return to visual meteorological conditions (VMC) his aircraft crashed and he was killed.

The unit had been involved in a field training exercise which was nearing completion. The pilot was one of three scheduled to fly aircraft back to the airfield alone. The unit commander was under the impression that all three pilots had recently flown at night in the training area. He was mistaken, none of them had.

This pilot had only 19 hours of night flight time, all of which were dual pilot except for .6 of 1 hour. He had little hood or SFTS flight time and this was his first solo night takeoff.

When weather conditions began deteriorating, departure time was moved up two hours. The commander did not want to be forced to remain in the field overnight. He had told pilots in his unit, however, that he would support them in decisions not to fly due to weather or if they felt the flight would exceed their capabilities. The only comment made by the pilots was that perhaps they should wait for the scheduled takeoff time. When he repeated his desire to take off early they began preparing for the flight.

Weather conditions were within the guidelines of AR 95-1 and the airfield was only 5 miles away. The first aircraft took off with the unit commander as a passenger. Shortly afterwards it encountered IMC and the commander told the pilot to radio the remaining two aircraft (who were to follow at 30-second intervals) to stay on the ground.

The third aircraft remained on the ground but the second aircraft had already taken off. Shortly after takeoff, the pilot of No. 2 aircraft radioed that he was NOE and proceeding to the airfield. The other pilot cautioned him about wires across his flight path and asked him if he was using his landing light.

No reply came but the light was seen to go out. The aircraft entered a fog layer then was seen emerging from the top, in a climbing turn toward the west. Witnesses saw the aircraft between cloud formations at about 500 to 700 feet agl and climbing. It was next seen about 2 kilometers farther west at cruise speed, low altitude and in a right descending turn from a western to northern heading. The aircraft crashed at or near cruise speed, in a relatively level attitude, about 200 meters from the witnesses on the ground.

The three aviators had discussed departure procedures from the dusty field area, flight routes, radio frequencies, and vertical helicopter instrument recovery procedures (VHIRP) while waiting for the scheduled takeoff. The mishap pilot was following VHIRP procedures. While he did not answer radio calls, he must have had the communication equipment on as required by par. 4-4, AR 95-1, because he responded to the question about the landing light.

His apprehension about conducting the VHIRP at night as a single pilot into a nonradar facility may have influenced this inexperienced pilot's decision to try to return to low-level visual flight conditions.

- Another pilot's low experience level in the OH-58 he was flying, the absence of any documented instrument training in the aircraft and the lack of any actual instrument flight in IMC caused him to become spatially disoriented when he entered IMC conditions on a night VFR flight. He lost control of the aircraft, hit the top of a tree and crashed.

The pilot had transported three passengers and then returned them to the pickup point where another member of the unit, an OH-58 crew chief, asked him for a ride to the unit field site. When he called the airfield tower for clearance, he was told to remain clear of the runway centerline because of an emergency in progress. He returned to a field strip where he held in flight about 8 minutes. This time his request for clearance was granted.

After flying for 2 to 3 minutes, he was unable to find the unit field site because of an overcast condition and lack of ground reference lights. He began to fly in left orbits searching for the site. About 2 minutes later, while at 500 feet agl, and in a left turn, he entered IMC. He tried to maintain control and started to climb to a higher altitude. When he reached over to change the transponder to emergency he became further disoriented within the cockpit. He was unable to establish or maintain

control and the aircraft banked left and right several times.

About 3 miles south of the airfield, the aircraft clipped the top of a tree, crashed through several other trees and came to rest on its left side.

The air traffic controller was relatively inexperienced and the other tower operator was a trainee. Although the airfield control zone had been under IMC approximately 9 minutes before the mishap the condition was not broadcast to any aircraft in the control zone. The weather information appeared on a weather monitor screen in the tower 4 to 7 minutes before the mishap but the operator either didn't see it or failed to realize that the weather was IMC. The controller also had trouble understanding the pilot when he tried three times to declare an emergency. While the tower operator was calling back to the aircraft in an attempt to understand what was happening, the pilot became so involved in handling the emergency that he couldn't respond.

The lack of any documented instrument training in the OH-58, the lack of any actual instrument flight in IMC for the pilot, and the inexperience of the tower operator and his failure to warn the pilot of IMC at the airfield, combined to destroy an aircraft and cause major injuries to the pilot. The passenger sustained minor injuries.

Most of the mistakes which led to such catastrophic results when aviators entered IMC need never have happened. Factors contributing to these mishaps must be emphasized to all aviators.

Inadequate weather analysis. AR 95-1 specifies flight weather planning and the restrictions under which Army aircraft operate. Even when the weather is equal to, or greater than, the VFR minimums, aircraft can run into trouble en route. The aviator who deliberately chooses to take a chance with marginal weather is asking for trouble. Accident investigation shows that many times someone had reservations about the weather but either did not speak up or yielded to someone else's decision.

Lack of proficiency in instrument flying. The fact that a pilot has experience in flying an aircraft does not necessarily mean that he is experienced in instrument flying. Even with documented instrument flying experience, an aviator who has not had recent experience or kept in practice can become disoriented and apprehensive when inadvertently entering IMC. Then he makes mistakes which lead to mishaps.

Poor crew coordination. Sudden and unexpected entry into IMC requires immediate transition to instrument flying and exacerbates poor crew coordination. Aviators who become anxious are more likely to make errors just at the time when demands on judgment and skill are the greatest.

The crew which tried to fly a Cobra through a mountain pass in deteriorating weather is a good example. The flight leader, who was PIC, told the copilot, who was at the controls, to break right. The copilot asked if he meant left (toward a highway). The PIC again told him to break right. As the copilot began a right turn with approximately 30 degrees of bank, the aircraft entered IMC. The PIC took control and increased power to begin a climb. He was unaware that the copilot had increased power before relinquishing control. Airspeed had decreased to 60 knots. The PIC added more power and noticed he had about 60 pounds of torque and that the aircraft was out of trim. He decreased power and applied antitorque pedal to trim the aircraft. The airspeed indicator went to zero and the aircraft entered an unusual attitude.

The PIC radioed other aircraft in the flight that they were in trouble and tried to lower the nose of the aircraft to regain airspeed. The pilot of one of the other aircraft tried to calm him so he could regain control of the aircraft. During this time the copilot got back on the controls. When the aircraft came out of the clouds in a nose-down attitude, about 50 feet above the ground, the PIC and copilot applied full aft cyclic. Just before the aircraft hit the ground, the PIC pulled full collective pitch but the high rate of descent could not be stopped and the aircraft crashed, coming to rest on its left side.

Single-pilot flight. The single-pilot, flying at night, who inadvertently enters IMC can quickly become task saturated. The OH-58 pilot, inexperienced in flying alone at night, was following VHIRP procedures when he apparently decided to try to return to low-level visual flight conditions. If there hadn't been a communications error which caused aviators who would have performed second pilot duties to be sent from the field area prematurely, this young aviator might still be flying.

The difference in planned and unplanned entry into IMC is preparation. Planning for a flight should include the eventuality of encountering IMC, particularly if weather is marginal. The crew should discuss and mentally rehearse what each will do if they fly into IMC.

During the flight, crews should continue to talk about what they will do. Then if they encounter IMC, the confusion and anxiety that usually follows can be avoided. Plan, rehearse, talk and then if it happens, act—calmly, coolly—and stay in control of the aircraft.

We're still a long way from being able to control the weather but with the right training, practice and planning we can control what happens after inadvertent flight into IMC.

PEARL'S

Personal Equipment And Rescue/survival Lowdown

Debra Gerisher photo by Reflections Studio

Guidance For Maximum Service Life For Food Packet, Survival, General Purpose

The following is U.S. Army Natick Research and Development Center's (NRDC) guidance in determining shelf life and replacement criteria for the food packet, survival, general purpose, NSN 8970-00-082-5665, ration:

- Based on data generated by NRDC, the expected useful shelf life of this ration is 60 months stored at 40 degrees fahrenheit, 48 months at 70 degrees fahrenheit and 24 months stored at 90 degrees fahrenheit.
- The ration should be replaced in total if there is evidence that it has been in constant storage for 1 month at 140 degrees fahrenheit minimum.

Based on the various conditions expected to occur as a result of aircraft sitting on the ground under varying temperature conditions, it is the position of NRDC that the rations should be replaced at 36-month intervals.

An important note here is not to confuse service life with shelf life. The shelf life is the life of the item under controlled conditions. The service life begins when the item goes into use or service. In this case, the service life begins when the food packet is placed in the kit, at unit level, to be used onboard an aircraft.

Point of contact is Walter Fitmaurice, NRDC, Natick, MA, AUTOVON 256-4506. •

SRU-21/P Survival Vest

Some of you may still be receiving SRU-21/P survival vests without the new AN/PRC-90 radio pocket already sewn on. If you are, you can remedy this problem by ordering the radio pocket (NSN 8415-00-442-3616) separately and sewing it in the place on the left side of the vest. I refer you to the latest configuration drawing in the PEARL'S article on page 21 of the May 1984 issue of *Aviation Digest*.

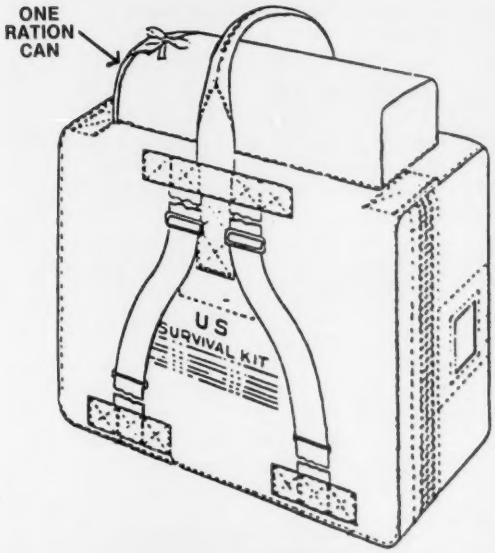
There are some smaller vests out that fit chest sizes up to 37 inches. To order the small vest complete with contents, order NSN 8465-01-174-2355. The small vest without contents may be ordered under NSN 8415-01-173-8098. For chest sizes larger than 37 inches you may order the large vest with contents under NSN 8465-00-177-4819. To order the large vest without its contents order NSN 8415-00-177-4818. This is all rather confusing; however, we are attempting to get a better fit for all aviators by offering two sizes of vests. Also, the latest updated supply catalogs for the SRU-21/P are expected to be distributed in the next few months.

Point of contact is Jim Dittmer, AMCPO-ALSE, AUTOVON 693-1218.

Packing Problem With Survival Kit (Cold Climate)

It has come to our attention that the new candles for the cold weather survival kit, NSN 1680-00-973-1862,

and the first aid kit are larger than they used to be. If you are having a problem packing all the components into the inner case of your survival kit because of the increased sizes of the five containers of candles and the first aid kit, switch one can of rations from the inner case to the outer packet of the kit. This will allow adequate room in the inner case for the remaining components.



Suspension System For Aviator Use Wearing the AN/PVS-5 Night Vision Goggles

Pilots have reported difficulty using the AN/PVS-5 night vision goggles (NVG) while flying. The goggles' weight induces neck muscle strain and headaches after only a short period of use. The Night Vision and Electro-Optics Laboratory, Ft. Belvoir, VA, in conjunction with the Army Materiel Systems Analysis Activity, prepared Interim Note No. F-54, which discusses the problem and feels flight testing for a possible interim solution to the aviators using the AN/PVS-5 should continue. This is the lightweight cutaway fix most of you are currently using. However, the present NVG will have to do until the Aviator's Night Vision Imaging System (ANVIS) AN/AVS-6, becomes available (sometime in mid fiscal year 1985). The future looks brighter for you aviators when we finally see the AN/AVS-6. PEARL will keep you aware of ongoing actions in this related Aviation life support equipment area.

More sizes of Nomex Flyer's Coveralls

In the "Nomex Update" article in July 1984 PEARL'S we stated that the coverall came in 14 standard tariff sizes. Upon further investigation we find that the CWU-27/P actually comes in 24 sizes. To facilitate your requisitioning of this item, we have listed the sizes and their NSNs here. By the way, all of these appear in the Army Master Data File.

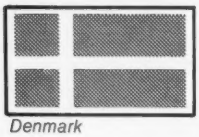
Size	NSN	Size	NSN
32S	8415-01-043-8376	40L	8415-00-491-0959
32R	8415-01-043-8377		when exhaused use
34S	8415-01-043-8378		8415-01-043-8388
34R	8415-01-043-8379	42S	8415-01-043-8389
36S	8415-01-043-8380	42R	8515-01-043-9529
36R	8415-01-043-8381	42L	8415-01-043-8390
36L	8415-01-043-8382	44S	8419-01-043-8391
38S	8415-01-043-8383	44R	8415-01-043-8392
38R	8415-00-491-0915	44L	8415-01-043-8393
	when exhausted use	46S	8415-01-043-8394
	8415-01-043-8384	46R	8415-01-043-8395
38L	8415-01-043-8385	46L	8415-01-043-8396
40S	8415-01-043-8386	48R	8515-01-043-8397
40R	8415-01-043-8387	48L	8415-01-043-8398

The item manager for this is Mr. Joseph Mongelli at the U.S. Army Support Activity, Philadelphia, PA, AUTOVON 444-2537.

If you have a question about personal equipment or rescue/survival gear, write PEARL, AMC Project Officer, ATTN: AMCPO-ALSE; 4300 Goodfellow Blvd., St. Louis, MO 63120-1798 or call AUTOVON 693-1218/9 or Commercial 314-263-1218/9.

Belgium

Canada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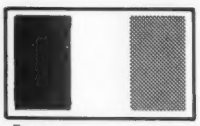
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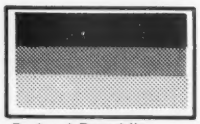
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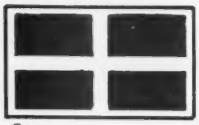
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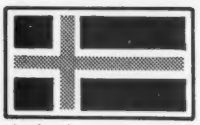
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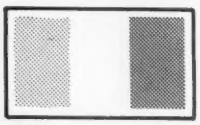

Italy

AVIATION UNITS that may be required to operate as a joint national force should be aware that the U.S. Army has ratified a North Atlantic Treaty Organization (NATO) standardization agreement (STANAG 2351, Procedures for Marshalling Helicopters in Multinational Land Operations) that directs the procedures for marshalling helicopters. As a signatory to this agreement, it is incumbent upon U.S. Army Aviation units to abide by the terms of the STANAG. Units are encouraged to use this document as a guide for development of their standing operating procedures.

Units which are subject to this agreement are encouraged to validate the content of the STANAG. If it is determined that there are terms of the agreement which need to be considered for changes, a standard DA Form 2028 should be submitted.

1. *Aim.* The aim of this agreement is to standardize procedures for the NATO forces to be used by marshallers/guides directing ground movements of helicopters in multinational land operations.

2. *Agreement.* Participating nations agree to adopt the procedures set out below.

3. *Definitions.* The following terms and definitions are used for the purpose of this agreement:

a. Load Control Group. Personnel who are concerned with organization and control of loading within the pickup zone.

b. Hookup Man. The person responsible for attaching the external load and controlling the take-up of strain of the load sling.

c. Marshaller. A person who directs the ground movement of aircraft by the use of hand and arm or light signals.

4. *General.* This agreement is intended to adopt a common procedure for contact between marshallers/guides and helicopters approaching a landing site in order to load or unload personnel and/or material and a common procedure for guiding each helicopter with a minimum delay, to its selected landing point. It is recommended that liaison (where feasible) between the supported and supporting units be effected prior to conducting marshalling operations.

5. The marshaller is to have knowledge of the applicable marshalling signals (STANAG 3117).

DETAILS OF THE AGREEMENT

6. *Internal Loads.*

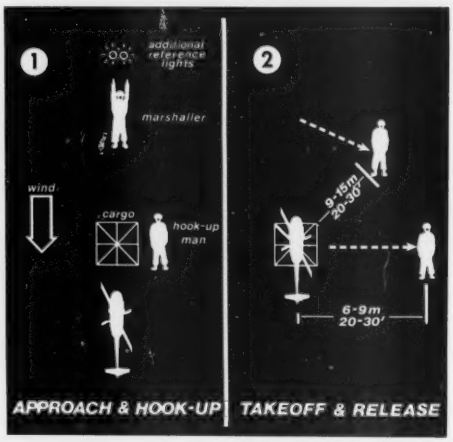
a. One marshaller may be required for each landing point, depending on the number of aircraft to be controlled, the separation between aircraft and the distance between landing points.

b. The marshaller will be briefed on the procedure to be used at the landing points by the leader of the load control group.

c. Before the arrival of the helicopters, the marshaller is to move to a safe point near the desired landing point, which enables him to look into the direction of the approaching helicopter.

d. Prearranged signals may be used after contact with the approaching helicopter unit

Position of Helicopter Marshallers and Hook-Up/Release Personnel



has been established by the appropriate control group.

e. Marshallers should ensure safe clearance and operating conditions between aircraft when directing an aircraft to its designated landing point.

f. The marshaller shall remain in view of the pilot when directing the movement of the aircraft. When handover to another marshaller is required, the initial marshaller will not direct his attention away from the aircraft until positive control by the second marshaller is attained.

g. Upon completion of loading, the aircrew will signal the marshaller that the aircraft is ready for movement.

7. *External Loads.*

a. A marshaller and at least one hookup man should be provided for each helicopter when attaching external loads.

b. The hookup man is to ensure the discharge of the static electricity of the helicopter before attaching the load. The marshaller is to position himself in sight of the helicopter pilot and is to direct the helicopter over the load until the hookup man has attached the external load.

c. After hooking up the load, the marshaller indicates to the pilot that the load is attached. The hookup man is to ensure that the hook is properly closed and is to guide the slings until the slack is taken up in order to ensure that they do not foul the load.

d. When the slings are seen to be taut and correctly fitted, the hookup man is to clear to a safe distance (about 20 meters to the side of the helicopter). When the load is clear of the ground and the marshaller is satisfied that it is secure and properly suspended, he is to give the "affirmative" signal to the pilot.

8. *Night Operations.*

a. When possible, the marshallers should walk the landing site during the day prior to conducting night operations.

b. Lighting devices will be required by the marshallers to display the signals to the aircrew. The intensity of these lights will vary, depending on the means of vision (e.g., unaided or night vision devices) the aircrew uses.

c. Additional reference lighting for external load operations will be provided when requested.

9. *Marshalling, Supported Unit.* The responsibilities of the supported unit are as follows:

a. Provide specially trained personnel to marshall helicopters to their landing points for the pickup and release of external loads. Whenever practicable, these personnel are to be equipped with distinctly colored clothing (e.g., fluorescent international orange or yellow).

b. Use marshalling signals as set out in STANAG 3117.

c. Position marshallers and hookup personnel as shown in the figure.

d. Restrict the presence of personnel in the danger area around the helicopter to those directly involved in the marshalling, loading, hookup or release of cargo.

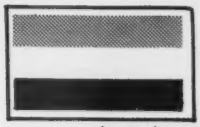
e. When conducting hookups at night, equip ground personnel with a night lighting device. The intensity of this light will vary, depending on the means of vision (e.g., unaided or night vision devices) the aircrew uses.

f. Aid the pilot in hooking up loads at night. Additional reference lighting may be requested by the helicopter unit.

10. *Marshalling, Helicopter Unit.* The helicopter unit may issue special instructions on hookup procedures if necessary.

11. *Emergencies.* In case of emergency, the helicopter may need to land quickly, avoiding the load. The hookup men should therefore clear from beneath the rotor as quickly as possible.

If this article has generated any questions or requirements, please contact Mr. Rush Wicker by writing Commander, U.S. Army Aviation Center, ATTN: ATZQ-D-CC, Ft. Rucker, AL 36362-5000.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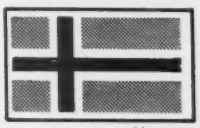
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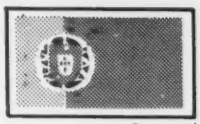

Portugal

Spain

Turkey

United Kingdom

United States

A Good Safety Record is No Accident

MUCH HAS BEEN said and done recently to reverse an upward trend of Aviation mishaps. The problem centered on inadequate self-discipline on the part of some aviators, and inadequate supervision by some people in the chain of command.

The Army cannot accept the risk of aviators who knowingly and willfully violate rules and regulations, and consequently cause aircraft mishaps. Therefore the Department of the Army (DA) took stringent action to require precise and comprehensive aircrew mission briefings and mission brief backs for flights.

In addition to this DA level action regarding high-risk aviators, senior aviators must take the lead in "policing their own," and commanders must ensure that violators know before mishaps occur that they will be held accountable for their own actions.

All Aviation units do not have aviators who exhibit unacceptable behavior in that they knowingly violate Army regulations, standing operating procedures or other established procedures or prudent air disciplines that place personnel and/or equipment at unnecessary risk. Some in fact have outstanding records.

This article provides information about some of the positive things being done in three units with excellent safety records. They are battalion/squadron sized organizations that were surveyed onsite by the U.S. Army Safety Center. The organizations are an air cavalry squadron, a combat Aviation battalion and an Aviation battalion, each with a different organizational structure and mission. The survey was conducted to identify factors responsible for the fine safety records of these organizations.

The areas of interest surveyed were:

- Management.
- Operations.
- Training.
- Mishap prevention program.
- Aviation medicine.

The following is a summary of the results of the survey. All observations included in this report were common to at least two of the organizations surveyed: Most were present in all three.

MANAGEMENT

Highly qualified Aviation commanders (company and battalion levels)

- Command positions filled with individuals having extensive Aviation background and experience.
- They had extensive Aviation technical knowledge.
- Were also strong in management and leadership abilities.

Commanders established performance criteria

- They clearly defined the performance criterion for each phase of operations.
- Ensured personnel were aware of these performance standards.

Highly selective pilot in command appointment process

- Aviators had to demonstrate knowledge of general flying, aircraft and aircraft systems, local flying area, unit mission, etc.

• Selection process considered input from established pilots in command, platoon leaders, instructor pilots and Aviation safety officers.

• *Pilot in command* was considered a *status earned* instead of something which was automatically given.

Individual training established as top priority for flying hour usage

• Development of knowledge, skills and combined overall capabilities of the individual aviator was considered primary responsibility of command.

• Individual aviator training established as the first priority ensured availability of flying time to achieve/maintain flight proficiency standards.

Positive support from higher headquarters

• Aviation commanders received strong support from higher headquarters, especially in safety related command decisions.

OPERATIONS

Flight operations conducted by the book

• Aviators were proud of the fact that their organization conducts flight operations by the book.

• They would not accept anything less.

• Senior aviators assist training the inexperienced aviators in by-the-book operations.

Aviators self-disciplined and police their own

• Aviators demonstrated a high degree of professionalism.

• Senior aviators accepted the responsibility of policing other unit aviators.

Immediate and effective enforcement action taken against violators of proper flight discipline

• Immediate and effective enforcement action of leaders reinforced self-discipline.

• Prompt and effective action created an awareness of intolerable behaviors and the consequences of any deviation from proper flight discipline.

Flight missions well planned

• Commanders actively involved in operations planning to include ensuring unit policies were followed and all safety aspects considered.

• Commanders required active involvement of essential staff and special staff (Aviation safety officer, instructor pilots/standardization instructor pilots, etc.)

Careful crew selection for each mission

• Total aviator flight time (experience) was examined for skills attained.

• Recent aviator flight time (experience) was considered for skills maintained.

• Experience was paired with inexperience.

• Flight crew skills were matched with type mission to be flown.

Strong noncommissioned officers' leadership in maintenance operations

Noncommissioned officers:

• Were competent in their technological skills.

• Supervised their personnel.

• Made on-the-spot corrections.

• Emphasized operations by the book.

Excellent quality control in maintenance operations

• Considered essential for safe flight operations.

• Held to be the strength of the maintenance program.

• Technical inspectors never sacrificed quality for quantity.

• Commanders would not tolerate sacrificing quality for quantity.

Maintenance performed by the book

• Commanders encouraged maintenance by the book.

• Required maintenance manuals were available to personnel.

• Maintenance officers/noncommissioned officers ensured maintenance was performed by the book.

• Peer pressure among maintenance personnel encouraged maintenance by the book.

TRAINING

Command emphasis placed on training

• Established training standards.

• Ensured training was conducted to those standards.

Instructor pilots/instrument flight examiners: enforcing the safety and standardization program

• By-the-book flying stressed by all instructor pilots.

• No-notice checkrides performed to great advantage.

• Instructor pilots instilled confidence in aviators.

• Instructor pilots were "instructing," not merely administering checkrides.

Top priority of training on individual aviator proficiency

• Priorities in flight-hour usage (individual training, team training, mission support) enhanced aviator proficiency.

• Individual aviator training increased aviator's capabilities in basic tasks while minimizing limitations in accomplishing required aircraft training manual tasks.

Emphasis placed on skilled qualification test training at all chain of command levels

- Noncommissioned officer managed.
- Command monitored.

MISHAP PREVENTION PROGRAM

Aviation safety officers were involved and supported

- Experienced aviators selected as safety officers.
- Actively involved in unit operations.
- Command support enhanced the influence and effectiveness of Aviation safety officers.

Safety surveys were performed and results acted upon

- Identified special hazards/problems.
- Results received action through command support.
- Enhanced safe by-the-book operations.

Safety programs well managed

- Appointment of senior aviators (credibility) as safety officers was key to well-managed programs. Aviators and commanders "listen up" to safety when skilled/experienced safety officers speak.
- Commanders made known their support for the Aviation safety officers and the safety program.

AVIATION MEDICINE

Optimum use of flight surgeons

- Used primarily in Aviation medicine specialty.
- Other medical duties minimized.

Flight surgeons supported individual aviators

- Knew most aviators well.
- Gave high degree of attention to individual aviator's medical needs.

Flight surgeons were involved in unit safety program

- Frequent participation in unit safety briefings.
- They enhanced aviator knowledge of aeromedical aspects of flying.

Flight surgeons support aviator units

- Extensively involved in unit aeromedical needs.
- Timely advice provided commanders regarding Aviation medicine matters.

Flight surgeon credibility

- Highly respected by aviators surveyed.
- Highly valued by commanders surveyed.

Flight surgeon support of aviators' families

- Enhanced knowledge of aviator and family interrelationships.
- Improved medical care of aviators' families.

The following conclusions were drawn from these observations.

Management techniques employed were not unusual or new. However, *the key* to these successful organizations was that *management actually practiced* these techniques.

Commander involvement was one of the most important factors found in these successful mishap prevention programs. A variety of leadership techniques was employed, but they were all successful because of command involvement throughout the entire organization.

The following command actions were essential elements in the management of these organizations.

- Established performance criteria.
- Ensured all personnel were aware of the performance criteria.
- Made certain training was conducted to a standard.
- Guaranteed operations were by the book.
- Took immediate and effective action against deviations from established performance criteria.

As reflected by the U.S. Army Safety Center study of these units—*to have a good safety record is no accident.*

Inadequate self-discipline involving aviators knowingly violating regulations, operating procedures or prudent air discipline of their own volition is responsible for 40 percent of all pilot-error mishaps. To overcome this needless loss of life and equipment, positive action must be taken by the chain of command *before* the tragedy occurs. This will ensure that the Army Aviation team is the most capable, flexible and responsive on the combined arms team's AirLand Battlefield of the future.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362-5000; or call us at AUTOVON 558-3504, FTS 533-3504 or Commercial 205-255-3504. After duty hours call Ft. Rucker Hotline, AUTOVON 558-6487 or 205-255-6487 and leave a message.

GOAL-
$2,500,000.00

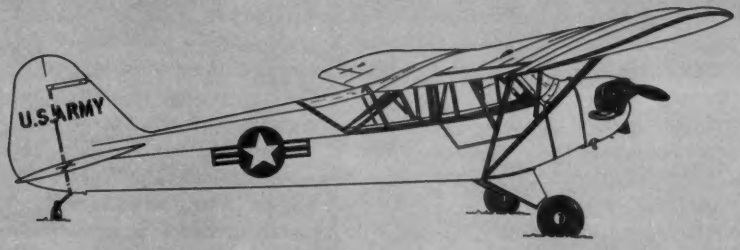
DECEMBER 1984-
$1,450,000.00
cash and pledges

Army Aviation MUSEUM

This is the first of a regular series about the Army Aviation Museum. Currently, plans call for building a modern complex to house your Army Aviation Museum. So far, enough money has been contributed to begin the first phase of construction. But we still have a ways to go, as the barometer above shows. If you would like to help "build" the Army Aviation Museum's new home, you are invited to send a tax deductible contribution to: The Army Aviation Museum Foundation, P.O. Box H, Ft. Rucker, AL 36362-5000. If you desire additional information, call Mr. Ed Brown at (205) 598-2508.

What's in Your Museum

The L-4 Cub, built by Piper Aircraft, played a significant role in the history of Army Aviation. Powered by a 65 horsepower, 4 cylinder engine, the Army's first L-4 was accepted in early September 1941, and was the principal combat airplane used by Army Aviation throughout World War II. Used primarily as an observation aircraft, the L-4 first saw combat in the invasion of North Africa on 8 November 1942 after taking off from the *USS Ranger*. Today you can see the L-4 at the museum.



AVIATION PERSONNEL NOTES

Volunteer for Airborne Training
SFC George F. Huggins

Soldiers who are interested in training and duty that offers challenges and rewards along with extra money should consider volunteering for airborne training with an ultimate assignment to the 82d Airborne Division at Ft. Bragg, NC.

Three military occupational specialties (MOS) in the enlisted Aviation field (CMF 67) are on the airborne critical list at Ft. Bragg. They are:

MOS 67V, Observation/Scout Helicopter Repairman, grades E1 through E5 needed; MOS 68B, Aircraft Powerplant Repairman, grades E1 through E4 and E6 needed; and MOS 68J, Aircraft Fire Control Repairman, grades E1 through E6 needed.

A fourth MOS, 67N (Utility Helicopter Repairman), is not on the airborne critical list. However, there are many requirements at Ft. Bragg in airborne positions, especially in grades E1 through E4.

Along with an assignment to the 82d Airborne Division, soldiers will serve in airborne positions and will receive jump pay of $83.00 per month. Soldiers now on promotion lists to E5 and E6, who have completed airborne training and who are in airborne positions, may be able to have their promotion point cutoff scores reduced. Soldiers should contact their local military personnel office for information.

Soldiers should check the criteria in chapter 6, section II, paragraph 6-6, AR 614-200, to determine their qualifications for airborne training. Procedure 3-19, DA Pamphlet 600-8, gives guidance for submitting an application for airborne training and assignment.

Soldiers stationed overseas must submit applications not more than 10 nor less than 6 months before date eligible to return from overseas. They must also include information on date of return and leave desired en route to airborne training.

An airborne physical and a physical training test must be administered, and soldiers must successfully complete the airborne course at Ft. Benning, GA, before they can be assigned to the 82d Airborne Division.

After completing the airborne course, soldiers are assigned to Ft. Bragg for at least 1 year. First-term soldiers who are assigned to an airborne unit, at completion of training, normally will remain at the location in an airborne position for the duration of their first assignment.

For career soldiers, the length of time at Ft. Bragg beyond 1 year will vary, depending on the current airborne strength levels in the soldier's MOS and grade.

For more information, contact SFC Huggins at MILPERCEN, DAPC-EPL-TA, AUTOVON 221-8322.

How to Lose Your Aviation Career Incentive Pay Without Even Trying!

Before you read this article, I want you to resolve to yourself that you are willing to take the time to correct any deficiencies in your records which may cause you to be over or *under* paid! Now that I have your attention, you need to do two things:

- Get a copy of your latest Leave and Earnings Statement (LES).
- Get a copy of your most recent Officer Record Brief (ORB).

If you don't have one, see your military personnel office. Now that you have these two items, sit down and prepare to inspect them carefully.

Figures 1 and 2 are reproductions of these important documents with areas that you need to "key on" to prevent pay problems. The problem which causes your incentive pay difficulties is encountered when the Aviation Service Entry Date (ASED) and Total Federal Officer Service (TFOS) date do not match on the LES and the ORB. These two items are both used to compute your eligibility for incentive pay and "gate" status.

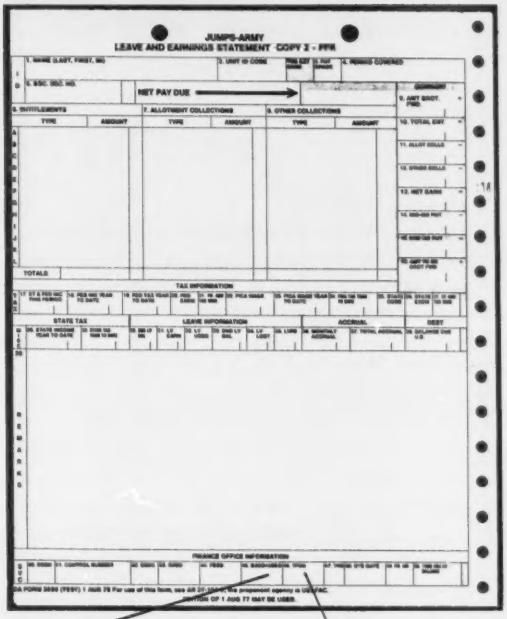
Check blocks 45 and 46 of your LES with the appropriate blocks of the Aviator Gunnery Qualifications

selection on the ORB. Are these two items synchronized? If not, it's time to send out the "Mayday" call and proceed with the following emergency procedures:

- Contact your local finance and accounting office.
- Contact your local military personnel office.
- If you cannot get the problem resolved locally, write to: Commander, MILPERCEN, ATTN: DAPC-OPA-V, 200 Stovall Street, Alexandria, VA 22332-0400. This step can be taken to resolve *any* Aviation Career Incentive Pay data problem, but any request must be accompanied by appropriate documentation to justify the change.

Recently, here at MILPERCEN, we have been able to resolve more than 200 mismatches of ASED and TFOS. This is an ongoing effort which requires extensive research of each case to pinpoint the exact problem. There are still an estimated 300 cases yet to be resolved. Don't be one of those 300 who suddenly find their flight pay reduced or cut off because of an administrative er-

FIGURE 1: Leave and Earnings Statement

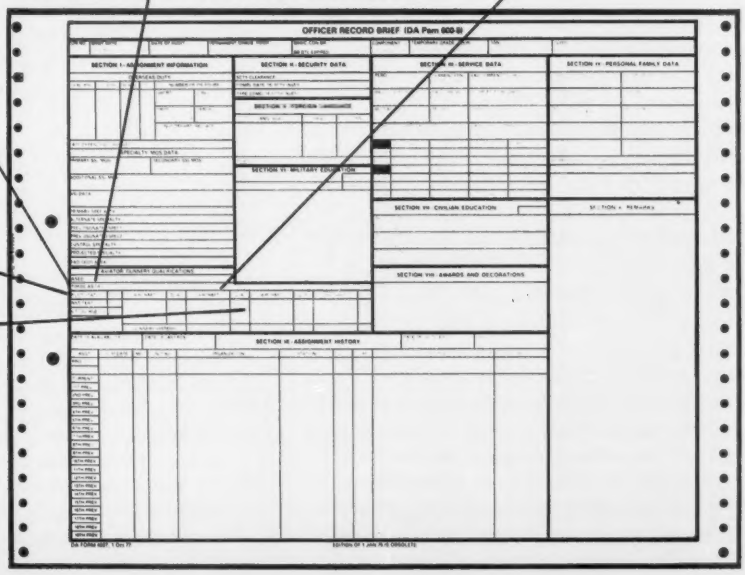


TOFDC (Total Operational Flying Duty Credit). The cumulative number of months an aviator is assigned to operational (not proficiency or nonoperational) flying duty positions.

ASED (Aviation Service Entry Date). The date an officer is first qualified, i.e., on valid orders, for Aviation service. Once established, ASED is not normally changed.

TFOS (Total Federal Officer Service). All officer service computed from date of original appointment as a warrant or commissioned officer.

FIGURE 2: Officer Record Brief


OFFICER RECORD BRIEF (DA Pam 600-8)
SECTION I - ASSIGNMENT INFORMATION
SECTION II - SECURITY DATA
SECTION III - SERVICE DATA
SECTION IV - PERSONAL FAMILY DATA
SECTION V - FOREIGN LANGUAGE
SECTION VI - MILITARY EDUCATION
SECTION VII - CIVILIAN EDUCATION
SECTION VIII - AWARDS AND DECORATIONS
SECTION IX - ASSIGNMENT HISTORY

Pilot Status Code
1 = Qualified for Aviation Service
2 = Medically Disqualified
3 = Non-Medically Disqualified
4 = Aviator—Not in Aviation Service

Aircraft Qualification Code
1 = Qualified Aviator
2 = Unit Trained Instructor Pilot
3 = School Trained Instructor Pilot

Date of Physical. This date should change annually.

ror. Check your LES and ORB to ensure all the data is valid. The guide to changing any element of the ORB is DA Pamphlet 600-8.

Change to AR 135-215

Since more Other Than Regular Army (OTRA) officers are now requesting Conditional Voluntary Indefinite (CVI)/Voluntary Indefinite (VI) status, a change to Army Regulation 135-215, "Officer Records of Service on Active Duty," is required to facilitate maintaining the necessary strength limits in both the high and low density functional areas (branches, specialties) and meeting the basic needs of the Army. The new system will require the establishment of a proactive centralized board responsible for the qualitative management of the officer corps. The proposed process, outlined within, will use a centralized screening process which will review the CVI/VI applications of all OTRA officers requesting career status.

Conditional Voluntary Indefinite Status

Evaluation will be accomplished by a single panel board. The board will include one member from a Reserve Component, an appropriate minority and female representation. The board president will be, as a minimum, a colonel. The board will select only those applicants with the potential to serve 20 years active federal service and whose manner of performance (MOP) is competitive with his/her contemporaries. Officers' MOP that represents a possible promotion risk will not be selected.

CVI applications will be processed as follows:

- OTRA officers will complete at least 2 years continuous active federal commissioned service (AFCS) prior to submitting a request for CVI.
- Officers will not be scheduled for advanced course attendance until CVI status is determined.
- Applications will include a recommendation from the chain of command and will be forwarded so as to arrive at the officer's career management division not later than the 27th month of AFCS.
- Applications will include a statement that the officer understands that he/she may be required to accept a branch transfer commensurate with the Army's needs in exchange for continued active duty and will list three branch preferences should mandatory branch transfer become necessary.
- If the officer desires to be voluntarily branch transferred, this desire also will be noted on the application.

Voluntary Indefinite Status

Board membership and procedures will remain the same as used for CVI.

- OTRA officers will be considered for VI status by the centralized board prior to completion of 8 years AFCS.
- The centralized selection board will vote the officer's file for VI at the 7th year, 6th month point of AFCS. All CVI approved officers will be identified automatically by computer, so no formal application is required for VI.
- All officers approved for VI will be allowed to remain in the Army until selected for major and integrated into the Regular Army, unless separated sooner under other appropriate regulations.
- At the VI point it is the desire of Department of the Army to have succeeded in balancing all branch strengths. If basic branch shortages still remain, however, it may be necessary to rebranch additional officers from over-strength specialties to those under-strength. If this situation occurs, every effort will be made to assess the impact of such a move on a specific officer's career. Additionally, every effort to branch transfer by volunteers will be made, preferably selecting those officers who have the most experience in the new branch.

All officers already approved for CVI/VI will continue active duty service under the old CVI/VI criteria. The implementation of this new plan will be on or about 1 January 1985.

The proponent to AR 135-215 is MILPERCEN, ATTN: DAPC-OPP-M. Point of contact for questions is Personnel Actions Branch, Combat Arms Division, AUTOVON 221-0146/7 or Commercial 202-325-0146/7.

CORRECTION

In the November 1984 issue the introduction to the article "Air Force Air Ground Operations School" the *Aviation Digest*, erroneously stated the course was for 6 weeks. The introduction should have stated that the Battle Staff Course was 3 weeks and the Joint Firepower Course was 2 weeks for Army personnel. The *Aviation Digest* regrets the error. If anyone wants a copy of the article, please write to Editor, P.O. Drawer P, Ft. Rucker, AL. 36362-5000.

Have you ever considered what you would do if put into a survival situation? Well, with a little innovation several items may be readily available for use, but first you should...

...BE PREPARED

W01 Erik P. Feldmanis
Directorate of Plans and Training
Aviation Division
Fort Knox, KY

IT'S 0700 HOURS on a cold winter morning and you are tasked to carry four passengers in a UH-1H Huey to a field site in the mountains. You preflight the aircraft, file a local flight plan and check weather.

The weather forecaster is currently reporting 2500 broken with 3 miles visibility. He is predicting the ceiling and visibility will drop with heavy snow possible around 1600 hours local. You review the specified times given (1 hour to destination, about 4 hours ground time, to include refuel, and 1 hour flight time back to home base) and decide to fly the mission.

The flight out to the field site is uneventful; however, there is a 6-hour delay at the field site rather than the scheduled 4-hour delay. By now it has started to snow but the visibility is still about a mile. You know that the forecaster isn't predicting the heavy snow until about 1600 hours. You estimate that it will only take you about 45 minutes to fly home, so you decide to fly back to base.

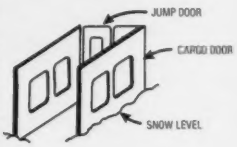
About 25 minutes into the flight, you notice that the transmission oil pressure gauge is reading zero. You immediately start a descent to land. Due to your altitude you are unable to get a radio call out before landing. Luckily there is a small open area and you successfully complete a safe landing. Once on the ground you attempt to make radio contact with the tower and field site to no avail, due to the height of the surrounding mountains. You wait another 15 to 20 minutes and once again attempt reaching the parties but are unsuccessful.

By now the intensity of the snowfall has increased drastically. Visibility is down to 1/8 mile and dropping. Now you start to worry.

You know that since you couldn't establish radio contact, nobody knows your position and because of weather conditions, it'll be impossible for anyone to locate you. You now realize that you are in a survival situation.

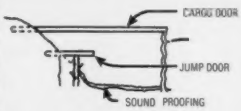
This is just a hypothetical situation, but, what would you do?

First, you must build a shelter. The cargo doors, crew doors and jump doors could be used for the shelter frames or walls (see figure). The insulation could be used as a ground cloth or blanket.



The jump doors also could be used as a stretcher if there are injuries. Jet fuel can be used to start a fire, even if the wood is wet. (WARNING: You want to avoid using the oil or hydraulic fluid due to the toxic fumes they produce.) The passenger seats can be removed and, with the legs in the snow, could be used as a cot, keeping you off the ground.

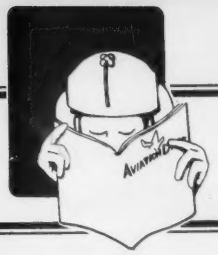
If you pull the pins off the engine compartment doors, the door could be used as a fire shelter. The angle of the door would protect the fire and if placed outside the shelter, would reflect the heat inside the shelter.



The microphone cords and seat belts could be used as rope to secure the shelter, or secure a splint.

The items mentioned here are just a few things in the UH-1 that COULD BE used in a cold weather survival environment. There are certainly other items that can be used for survival (depending on your individual imagination), so next time you're not busy, take a few minutes and think about the unexpected. IT COULD SAVE YOUR LIFE.

VIEWS FROM READERS



Editor:

Believe it or not, I just received and read the excellent September issue of *Aviation Digest*. The Directorate of Evaluation and Standardization report on night vision goggles and Major Zebehazy's threat article on second generation antitank guided missiles were both highly informative and relevant to today's tactical aviator. Even more intriguing, from my point of view anyway, were "Aviation Employment in Special Purpose Operations," by Captain Ron Klein, and "OH-58 Loss of Tail Rotor Effectiveness; Why It Occurs," by Captain David Snellen. These articles are superb examples of the great strides Aviation is continuing to make as the Army's newest branch.

Starting with Captain Snellen's article, I would like to say that this is the most cogent discussion of the problem I have ever read. It certainly reinforces the published emergency procedure; and the LTE [loss of tail rotor effectiveness] conducive regions chart in the figure 2 is certainly a better representation than the incomprehensible diagram in the dash 10. One only wonders why it took so long to establish the Joint Special Studies Group, and who was responsible for the previous blizzard of changes to the dash 10 over the past 2 years, each incorporating a new, and incorrect, emergency procedure for LTE. I do have one reservation about the article, to which I shall return shortly.

Captain Klein's article on special purpose operations is equally praiseworthy. As one can deduce by checking his footnotes, Captain Klein had to pull in several different sources of reference material to reach his conclusions. That is the situation facing the Aviation leader today as he tries to understand the Army's doctrine on how he should best employ his unit to support the ground tactical plan. I hope that somewhere in the new FM 1-100 series this philosophy will be distilled into one coherent doctrine on how the various types of Aviation units are supposed to fight.

Along those lines, I have just read FM 1-107, "Air-to-Air Combat." This is an invaluable document which all Army aviators should read and heed. This publication is long overdue. At last we have some realistic tactics with which to deal with the air threat. I'm sure we were all painfully aware that the old "run-and-hide"advice just didn't cut it anymore.

With all the great new doctrine all we need now is the hardware and the training to put it into effect. It seems apparent that the days of unarmed "tactical" aircraft are over. Just as no ground commander would think of letting his scout jeeps or tactical convoy trucks operate with no weapons, so should we make every effort to arm our aircraft to perform their missions when they fly "in Harm's Way." Specifically, aeroscouts must be equipped with some sort of air-to-ground weapon; minigun, .50 cal., grenade launcher or whatever, and all our tactical helicopters should be equipped with the air-to-air Stinger as soon as possible. At the same time, we need to take all possible measures to phase out or replace our teeter-totter rotor systems. A possible course of action might be to modify all OH-58 scouts with the AHIP [Army Helicopter Improvement Program] engine, drive train and rotor.

Finally comes my one reservation about Captain Snellen's fine article on LTE. He says LTE can be avoided and/or overcome "if the pilot will concentrate fully on flying the aircraft." This leaves the guy in the other seat to perform all the tasks related to accomplishing the mission. But where is that other guy coming from? The TOE [table of organization and equipment] for aeroscout platoons only authorizes one pilot and one crewchief per aircraft. Thus, the commander must double up his pilots, halving the number of crews he can field. In the Army's one recent test of this arrangement, aeroscout platoons in Grenada were augmented with pilots from other units. I hope this is not how we plan to fight the next war. I also hope that the much mentioned but little seen "aerial observer" does not turn out to be the school solution. The workload on the aeroscout, or air battle captain, is too great to entrust the conduct of the operation to some undertrained soldier who will more than likely spend most of his garrison time in the motor pool or on detail. We need to bite the bullet, admit that the aeroscout mission requires two pilots, and have the TOEs changed accordingly. It just doesn't make sense to have the crew that, within the scout/gun team, is by far the busier of the two, handicapped with a nonpilot onboard.

Well, I've gotten rather far afield. I do want to congratulate you on your excellent and ever-improving publication. Here's hoping if we ever have to go, we've got the right baggage packed.

CPT Randall N. Briggs
Aeroscout Platoon Cdr
A Trp, 1-17 CAV
Ft. Bragg, NC

Editor:

An updated set of field manuals will be introduced this fiscal quarter, FM 24-1 through FM 25-4, which provides techniques, principles and procedures for training and training management in all combat arms, combat support, and combat service support units, both Active and Reserve Component.

These manuals are the basis for all Army training and training management. FM 25-1, "Training," covers the philosophy and principles of training. It is for leaders at all levels. FM 25-2, "Unit Training Management," provides the Army training management process. It is for battalion and above commanders and staffs. FM 25-3, "Training in Units," provides the "how to" for the conduct of training. It is for leaders at battalion level and below, first-line trainers. FM 25-4, "How to Conduct Training Exercises," describes the conduct and use of training exercises to sustain skills. It is primarily for commanders and staffs at battalion level and above.

These manuals are significant doctrinal contributions. Be sure to update your DA Form 12A (by checking block no. 159, Techniques of Military Instruction) or write the U.S. Army Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220 to obtain copies.

Colonel Andrew P. O'Meara Jr.
President, Army Training Board
Ft. Eustis, VA 23604

Editor:

Please forward a copy of your series of articles on brigade airspace management to the address below.

CPT Mark Wise
Ft. Leavenworth, KS

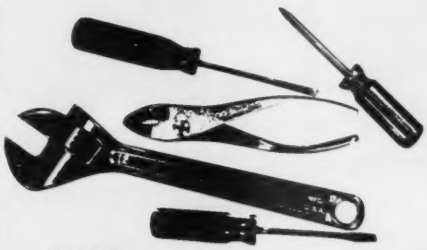
Editor:

I recently reviewed the August 1984 *U.S. Army Aviation Digest* and was particularly interested in the article "Brigade Airspace Management—Part IV."

Please send Parts I, II and III of the brigade airspace management series to me as I am unable to locate previous issues of *Aviation Digest*.

Thanking you in advance.

MAJ Bruce Carleton
Chief, Tactics and Doctrine
Hqs, 32d Army Air Defense Command
APO, New York



TOOL SUGGESTIONS

The Army has established a new entry point within the Army Materiel Command to submit new tool ideas or suggestions for minor items of equipment. This is to assist and encourage tool users to submit their suggestions to the Army's maintenance community for evaluation and possible acquisition.

The new screening point is:

Commander
USAMC Materiel Readiness Support Activity (MRSA)
ATTN: AMXMD-MD
Lexington, KY 40511-5101

New ideas also may be sent to the Materiel Readiness Support Activity through SMART channels to the following address:

Commander
U.S. Army Logistics Center
ATTN: ATCL-CST (SMART)
Ft. Lee, VA 23801-6000

Articles from the *Aviation Digest* requested in these letters have been mailed. Readers can obtain copies of material printed in any issue by writing to: Editor, *U.S. Army Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362-5000.

THREAT BRANCH

Major John Stewart Wilson
Threat Branch
Directorate of Combat Developments
U.S. Army Aviation Center
Fort Rucker, AL

Warning, what you say WILL be used against you!

Communications is the basic means to ensure troop control. Loss of communications is the loss of troop control, and the loss of troop control in battle invariably leads to defeat.

LTC L. Titov
Voyenny Vestnik No. 7, 1971

Soviet radioelectronic combat "radioelektronnaya borda" (REC), is the integration of signal intelligence, direction finding, jamming, deception and destructive fires to interrupt the enemy's command, control and communications (C^3). The Soviet's have recognized our dependence on radioelectronic communications. Their philosophy is reflected in the Titov quotation. They think they can win if they can disrupt C^3.

The goal of REC is to destroy or disrupt 50 percent of the enemy's command, control and weapon system communications, by jamming or destructive fires while protecting Soviet radioelectronic systems. We can expect the Soviets to try to destroy one-third of our communications facilities, degrade another one-third by jamming, and leave the last one-third open for surveillance and intelligence-gathering purposes.

The Soviets know they can't completely disrupt enemy C^3 for long periods, so they have developed mathematical models to determine the "critical times" of a battle. These are moments when action is required and delay could mean the difference between victory and defeat; this is when the Soviets intend to use REC.

There are REC units at different levels from front to division. The tank and motorized rifle divisions have their REC capability in the radio/radar reconnaissance company in the reconnaissance battalion. Field Manual (FM) 100-2-3, "Soviet Army Troops, Organization and Equipment," shows that these units have signal intelligence (SIGINT) and direction finding (DF) equipment. They do not appear to have any jamming capability. This means that everywhere an Army aviator could expect to operate, there will be at a minimum, a SIGINT and DF threat. There is a battalion-sized REC unit at the army level and a regimental-sized REC unit at the front level. Jamming capabilities appear at the army level, but the actual jammers would probably be close enough to the forward line of own troops to be effective. The destructive aspect of REC would be at every level of command. The Soviets will use all means available to destroy enemy emitters, including indirect fire, ground and air attack.

Signal Intelligence

The two components of SIGINT are communications intelligence (COMINT) and electronic intelligence (ELINT). The purpose of COMINT is to determine the enemy force structure, composition, condition and intentions, while ELINT is used to gather data on enemy emitters.

The Egyptian use of Soviet equipment during the 1973 Mideast War against Israel demonstrated the extensive intercept capability for radio transmissions. Intercept units are moved forward immediately behind leading regiments and they can intercept enemy transmissions within the following ranges of the forward line of own troops:

- Artillery ground radar—about 25 km
- Very high frequency (VHF)—about 40 km
- High frequency ground waves—about 80 km
- High frequency skywave—unlimited
- Frequency modulated (FM)—about 40 km
- Ultrahigh frequency (UHF)—about 40 km

Remember that what you say on a radio will be monitored by the enemy. In fact, they may pay more attention to you than the people you are trying to talk to. It certainly seems that way, sometimes. So use your secure capability or use authorized codes. There are some simple defensive countermeasures we can take to protect ourselves and the other members of the combined arms team. The following is from FM 1-101, "Aircraft Battlefield Countermeasures and Survivability," which is where you should go if you need to know more about this subject:

- Use secure equipment.
- Use correct communications procedures.
- Don't use the radio unless you have to.
- Don't key the mike more than 10 seconds.
- Use the CEOI (communications and electronics operating instructions)/brevity codes when you operate in the clear.
- Use low power.
- Authenticate when: You think the enemy is in the net; someone asks you to authenticate; you talk about enemy contact; you transmit directions, such as shift fire, return to the command post or turn off radio; you are authorized to send classified information in the clear; you transmit to someone under radio listening silence; entering a net; you transmit a message without receiving a timely response; you cancel a message and other station can't recognize you. When in doubt—authenticate.
- Use other ways to communicate (messenger, hand, light, send-a-message (SAM) or pyrotechnics).

The Direction Finding Threat

Once the enemy has picked up your transmissions, his next step is to find you. This is done by taking line bearings from one or more positions to the radio emitters. It is possible to pinpoint the location to within 50 to 200 meters. Normally three different radio direction finding (RDF) locations are necessary to fix an emitter. By plotting the locations of the DF sites and the azimuths to the emitter, a triangle will be formed. The emitter would be found inside this triangle. It is an accurate and effective method, and when used with SIGINT and other intelligence it can locate unit positions, track the movements of units and identify weakly defended areas. Tactical FM radios operating low power can be picked up in excess of 10 km and high power signals up to 40 km. Operational accuracies are usually within ± 3.5 degrees.

The time required to intercept a signal, pinpoint its location and take steps to jam, destroy or begin SIGINT is illustrated in figure 1. The chart shows that as early as 25 seconds after communications begin, the enemy targeting sequence can begin—even if the friendly station has stopped communicating. The danger point is from 20 to 25 seconds. So, it is obvious that we should train to spend much less time than this on the radio. It is important to note that it doesn't matter if you are talking or not—*what is important is how long the mike key is depressed.*

The data from DF operations serves many different intelligence purposes such as:

- Location of transmitters.
- Planning data for future operations.
- Targeting of destructive fires.
- Planning for jamming operations.

0 seconds	U.S. transmitter initiates communications.
10 seconds	During search of VHF band, **Communications Intelligence Operator** identifies U.S. transmitter and flashes alert to **Radio Direction Finder (RDF) Net Control Station (NCS).** **Communications Intelligence (COMINT) Operator** also notifies **Communications Intelligence Analysts.**
25 seconds	**RDF Net Control Station** requests bearings from stations 2 and 3 to target transmitter. **COMINT Analysts** forward information to **Plotting and Analysis Section.**
55 seconds	**RDF Stations Number 2 and Number 3** acquire bearings and report back to **RDF Net Control Station.**
85 seconds	**RDF Net Control Station reports** approximate location to **Plotting and Analysis Section.**
115 seconds	**Plotting and Analysis Section** refines approximate location by applying collateral information, map analysis and COMINT.
2 to 3 minutes	**Plotting and Analysis Section** feeds information to the appropriate unit for one of the following missions: • jamming • combat • fire • intelligence

FIGURE 1: Time required from Soviet signal interception to countermeasures.

All of these are important, but the last two form the basis for the disruption/destruction of the C^3 capability. The following simple countermeasures can be used to thwart this threat:

- Move frequently—it is hard to DF a moving helicopter. Move the unit often, too. There is nothing the GI loves better than to settle in. Fight this tendency.
- Remote antennas– the farther away they are the better—put them at least 1 km away.
- Mask your antennas—put a terrain feature between your antennas and the enemy. This hampers their pinpointing your location.
- Never refer to your friendly locations by terrain features—establish checkpoints and use them.
- Use secure voice or authorized codes when referring to location. It takes longer to use the codes but it's money in the bank.
- Land and talk face to face whenever possible.
- Don't use you radio unless you have to.
- Don't key the mike more than 10 seconds.

The Interference Threat

The Soviets will try to degrade one-third of our C^3 by radio interference or jamming. It can be active or passive. Active interference involves the radiation of radio waves against enemy radar and communication signals. Passive interference is the use of chaff or corner reflectors to create false targets on enemy radar screens. Active interference happens in one of three ways—spot, barrage and sweep jamming.

Spot jamming is used on one frequency with concentrated power. It denies enemy use of that frequency while not wasting power on frequencies where the enemy is not operating. It doesn't interfere with friendly transmissions. This is the most difficult type of jamming to work through.

Barrage jamming spreads the transmitted power over a wide spectrum of frequencies. It will affect all frequencies within the band and the transmission range. Since this will affect friendly units and enemy units it probably will be used when communications are not important to the Soviets or little is known about the enemy receiver's location.

Sweep jamming is a combination of the two. It is characterized by rapid changes in the jamming frequencies through a wide band. It concentrates all of its power in a narrow frequency briefly, and a wide frequency band is covered. It is possible that this could be worked through by timing your transmissions to the sweeps of the jammer.

There are several types of jamming signals and they include: babbled voice, tone, pulse, recorded sounds, random keyed Morse code, spark (short quick burst), random noise, random pulse and stepped tones. FM 1-101 has more information on the different types of jamming signals.

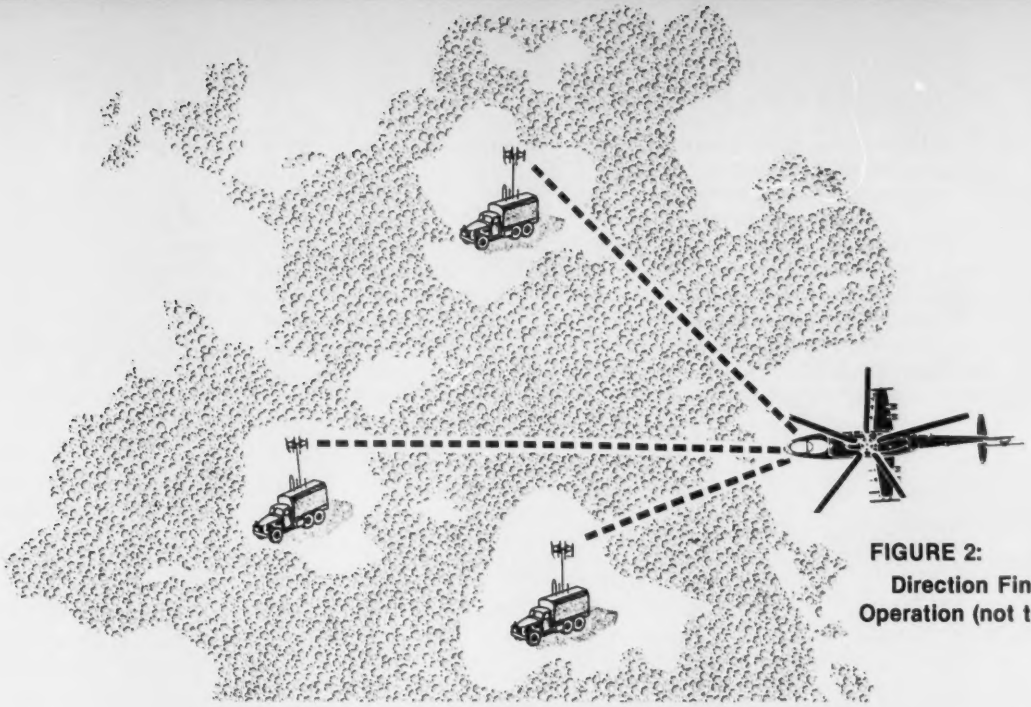


FIGURE 2:
Direction Finding Operation (not to scale).

After you realize you are being jammed you should:

• KEEP OPERATING—Don't let the enemy know if they are being effective. Try to work through the jamming by repeating the transmission, saying words twice and speaking slowly.

• Use a relay station to pass traffic for you.

• Use alternate means of communications, i.e., switch to UHF, VHF or FM radio if these aren't being jammed. Use SAM or hand and arm or pyrotechnic signals. The better the unit standing operating procedures and the more thorough the pre-mission planning, the less you will need to use the radio.

• Switch to high power on your radio.

• Mask antennas. Put a terrain feature between your antennas and the enemy.

• Don't use your radio unless you have to.

• Don't key the mike more than 10 seconds.

• Report (by secure means) enemy jamming immediately to your headquarters. This allows our units to locate, jam or destroy the enemy jammer.

• Switch frequencies. This needs thorough planning, intensive training and precise execution to be conducted properly. It is easy to lose control and have different parts of your organization on several different frequencies. Don't forget to let your higher headquarters know which frequency you end up on, too.

The Deception Threat

This part of REC can be divided into two parts—manipulative and imitative deception. Manipulative refers to bogus information that is transmitted by the enemy with the hope that we will act on it. Examples of this type of deception would be radio calls or messages that reveal information about nonexistent units, equipment, plans for future operations, exaggeration of enemy losses, battle damage, false intelligence and chaff that gives false imagery to radar used by radar guided weapon systems. The other form of deception is what most of us are concerned with.

Imitative deception is the intrusion by the enemy into our radio nets or the altering of navigational signals to mislead unwary aviators who are depending on NAVAIDs. The enemy may mimic someone on your net after monitoring it for some time to attempt to pass false information or to gain intelligence. Anyone who saw the movie, "The Conversation," also will realize that it would be easy for the enemy to record innocent tactical radio broadcasts, edit them so the entire original meaning is changed, and then play them back. All it takes is a receiver and a tape recorder. This would allow the enemy to disrupt operations unless proper procedures were followed. If you use the following countermeasures, the enemy will not succeed in his attempts at deception.

Imitative Deception:

• Use secure voice communications whenever you can.

• Authenticate when required.

• Authenticate randomly.

Meaconing (simulation of navigational beacon):

• Preplan your mission in detail. Use checkpoints, and time/distance/headings.

• Make radar vectoring stations authenticate.

• Use resection (electronically determine the reciprocal of the bearing to the radio beacon) to confirm the location of the beacon. You have to know the location of the beacon and your own location to do that.

• Report meaconing (by secure means) to your headquarters.

The Soviets have one of the best electronic warfare capabilities in the world. To thwart this threat we must understand the threat and train to defeat it. We must reduce our reliance on radio communications and learn to operate without them. When we do use them, we need to use them wisely. Incorporate electronic warfare training in everyday flights in addition to the tactical training. Take your unit tactical standing operating procedure off the fat boy program—take out all the garbage and make it lean and functional. Use it until it becomes second nature. We must be prepared.

Questions or comments concerning this article should be addressed to Threat Branch, Directorate of Combat Developments, ATTN: ATZQ-D-CT, Ft. Rucker, AL 36362-5000; or AUTOVON 558-5671/3506.

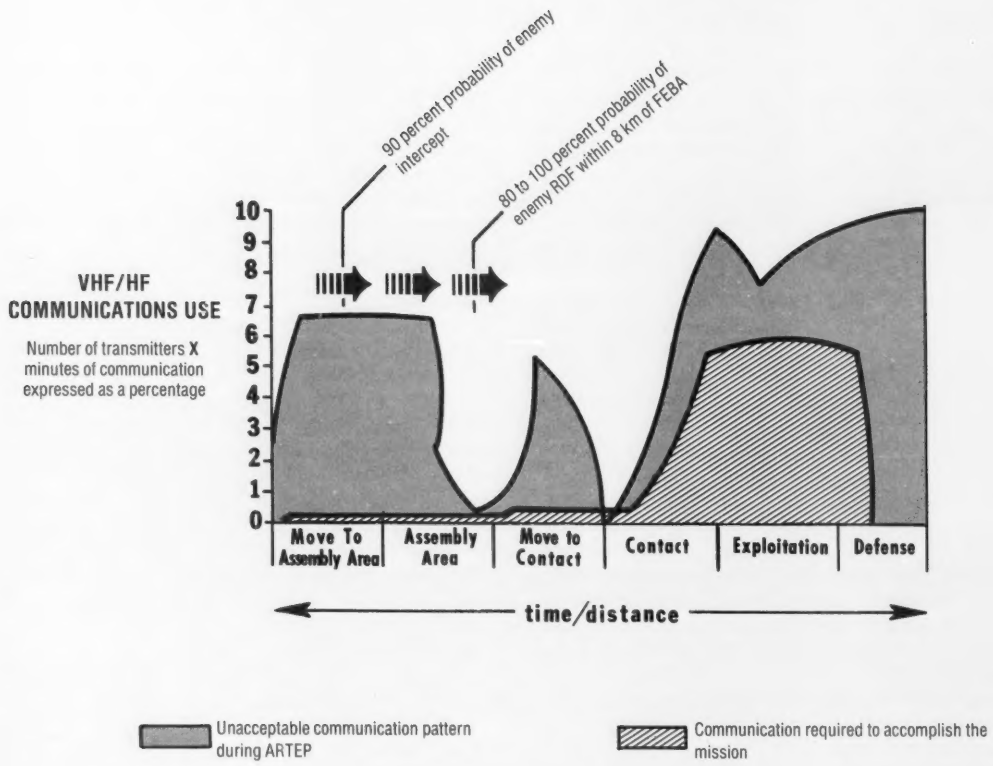


FIGURE 3: VHF/HF communication performance required for successful ARTEP versus previous historical performances.

New Brigade At Fort Rucker

Captain Linda E. Walker
Aviation Training Brigade
U.S. Army Aviation Center
Fort Rucker, AL

FORT RUCKER'S second brigade was activated in formal ceremonies at the U.S. Army Aviation Center on 28 September 1984.

Major General Bobby J. Maddox, Ft. Rucker commander, turned the brigade colors over to Colonel Haspard R. Murphy, the first commander of the new Aviation Training Brigade, which formerly was the Department of Flight Training (DOFT). The formal activation essentially completes a reorganization effort begun in mid-May 1984.

The new brigade's mission remains essentially the same as that of the old DOFT—to conduct flight training for Army, Army National Guard and Reserve student aviators, along with students from the Air Force, Europe/NATO and 22 other foreign countries.

With the adoption of School Model '83 and the resulting reorganization of directorates on Ft. Rucker, an internal assessment of structure, function and personnel alignments was conducted within DOFT by the then director of flight training, Colonel Norman M. Bissell. This assessment surfaced the need for a more uniform structure and the need to functionally realign the organization with mission requirements. A total reorganization was initiated that streamlined the chain of command, provided more uniformity and identified selected commissioned officer slots for conversion to warrant officer slots, minimizing multiple layering of captains and lieutenants.

The resulting organization closely paralleled a traditional TOE (table of organization and equipment) brigade structure and provided framework for establishment of a training brigade.

The concept of a training brigade exists at various Army training centers; however, the Aviation Training Brigade differs in that students engaged in formal courses of instruction are not assigned, but remain with the 1st Aviation Brigade.

The activation of the Aviation Training Brigade is significant; its mission requires efficient span of control, both administratively and nonjudicially, in order to handle the complex, demanding and safe Aviation training that is conducted daily. The new brigade facilitates this requirement by supporting both the training mission, which includes expanded tactical initiatives, and career enhancement for its assigned personnel.

The Aviation Training Brigade is composed of personnel who formerly were assigned to 14th Company, 1st Battalion, 1st Aviation Brigade. With the activation of the brigade, each division which conducted training out of Hanchey AHP, Cairns AAF and Lowe AHP became the 7th, 8th and 9th Aviation Training Battalions respectively. Branches within these divisions became lettered companies, and flights became platoons. This provides for simplified, uniform and identifiable command and control found in traditional Army organizations.

Though only a few months old, the Aviation Training Brigade has shown an improvement in personnel cohesiveness accompanied by the crucial elements of unit loyalty and esprit de corps.

MONTHLY WRITING AWARD

"ALL BLOOD RUNS RED"

Eugene Bullard, an American, was the world's first black aviator. For more than 2 years he fought in some of the bloodiest battles of history.

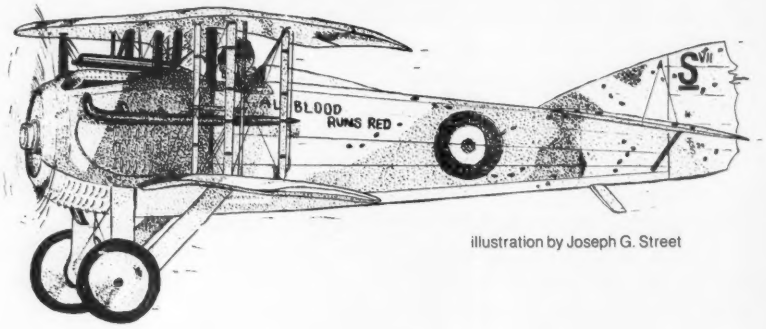


illustration by Joseph G. Street

Major Phillip E. Raschke

Major Raschke is currently chief of the Centralized Aviation Readiness Training team at Ft. Lewis, WA. He holds an MS in mass communications from the University of Tennessee and is a frequent contributor to military publications.

THE MOTTO ON the side of the French plane read "All Blood Runs Red." Thirty-seven German bullet holes adorned the aircraft's tail section. The plane's pilot, Eugene Bullard, thanked the enemy for hitting the aircraft's tail and not his.

Bullard's comments were history in the making. Why? Because he was the world's first black aviator and the only black pilot to fly in combat during World War I. Moreover, he was an American.

Born in Columbus, GA, in 1894, he fled to France in 1913 to escape the bigotry and persecution of the time. In France, the color of a man's hide makes no difference his father had told him. Although his father's comment was only hearsay, it fueled Bullard's dream for dignity and respect.

Once in France, Bullard embarked on a prize fighting career, but the roar of German artillery in August of 1914 quickly changed his destiny.

General de Gaulle walked up to him, grasped his hand and warmly embraced him.

Enlisting in the Foreign Legion, he underwent infantry training near Paris and arrived at the Somme Front in December of 1914. For more than 2 years, he fought in some of the bloodiest battles of history.

At Verdun, he won the Croix de Guerre for gallantry in action. He also received a serious leg wound which hospitalized him for more than 3 months.

During his convalescence, Bullard became acquainted with a Commandant Ferrolino, Chief of the French Airfield at Brun. When Ferrolino casually asked about Bullard's plans for the future, he replied, "I would like to be an aviator."

With Ferrolino's help, Bullard eventually obtained orders for pilot training. Following graduation in the spring of 1917, he received orders for advanced training at the Avord Aviation School. Upon arrival, however, he found himself in charge of the sleeping quarters for American pilots being assigned to the Lafayette Escadrille. He took the assignment in stride, hoping it would quickly pass. But as the weeks ticked by, Bullard began to ask, "What's going on?"

Inquiries with friends soon revealed that a Dr. Edmund L. Gros, an influential American, who had helped form the Lafayette Flying Corps, disapproved of an American black becoming a combat pilot.

Feelings similar to Dr. Gros' were not uncommon at the time. In fact, the United States did not train black pilots until 1943.

But Bullard was not to be denied. When he threatened to protest to French officials, orders arrived clearing the way for his assignment to a combat squadron.

At the front, Bullard did daily battle in the skies over France and Germany. He was shot down once and claimed two kills which went unconfirmed due to the planes crashing behind German lines.

While Bullard was fighting for France, German unrestricted submarine warfare eventually forced the United States into the war. Americans flying with French squadrons were encouraged to transfer to the American Flying Service. Many did, but Bullard's application went unnoticed.

Bigotry, however, was not limited to the Americans alone. On a rainy night in November 1917, Eugene Bullard unwittingly struck a superior officer after the Frenchman had made a racial remark.

His outstanding war record saved him from a court-martial, but his flying career was over. Deemed unfit for the elite flying corps, he was grounded and transferred back to the Foreign Legion.

Following the war, Bullard remained in France. During the 1920s, he worked as a bandleader and married a well-to-do French countess. Later, he operated his own nightclub and athletic club.

With the advent of World War II, Bullard once again found himself defending France against a German invader. Although badly wounded in fighting near Le Blac, he eluded capture, escaped to Spain and eventually returned home to his native America.

In America, Bullard remained relatively obscure. He worked at a series of menial jobs and lived in a momento-cluttered apartment in Harlem.

Shortly before his death in 1961, however, he received a rare honor. General Charles de Gaulle, President of France, was visiting New York. An aide invited Bullard to a reception for the French President.

At the reception, de Gaulle noticed Bullard's legionnaire uniform and the 15 decorations adorning his chest.

De Gaulle walked up to him, grasped his hand and warmly embraced him. Bullard said it was the proudest moment of his life.

De Gaulle's affectionate recognition of a fellow comrade-in-arms spotlighted the very essence of Bullard's life—that dignity and respect do not depend on the color of a man's hide, but on the fact that "all blood runs red."

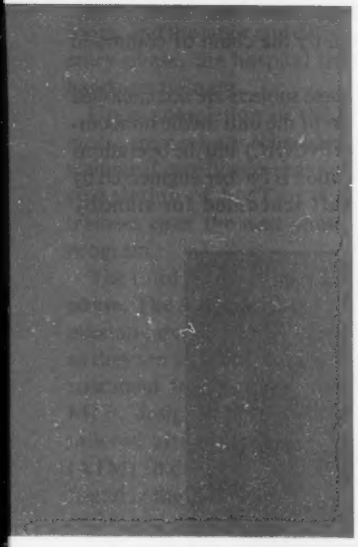
Flight Medic Training Program

With no written military reference material available, the 3/498th Medical Company (AA) has developed a three-phase program (initial entry, hospital training and continuation) for training and testing advanced and special skills required by 91BF (flight medic) personnel.

Captain Mark B. Hatter
Operations Officer
3d Platoon, 498th Medical Company (AA)
Fort Stewart, GA

THE AIR AMBULANCE flight medics are soldiers held in esteem by subordinates and superiors and envied by their peers. They are, by necessity, experts in medical and technical training above and beyond that level achieved by the basic 91B medical specialists. They are *the* key members of aeromedevac crews.

Flight medics assigned to air ambulance units are carefully selected by the chain of command through a process of interviews and record screens. The process assures selection of only the most qualified, motivated and work productive soldiers. Minimum training almost always includes training and certification in emergency medical training (EMT) as well as demonstrated proficiency in all of the basic tasks assigned in the 91B military occupational specialty (MOS) skills series. Those units participating in active Military Assistance to Safety and Traffic (MAST) are required by AR 500-4 to crew flight medics with at least EMT level training.



illustrations by Fred Martin

What impact does this create on air ambulance units with regard to training and management of flight medic personnel? Every enlisted MOS in the Army today has a skill level manual providing a comprehensive training outline for assigned soldiers in the required areas of expertise determined by that MOS. The 91B medical specialists are no exception until provided with advanced medical skills training that far exceeds those basic skills required in the 91B series manuals. Such advanced skills include basic EMT, advanced EMT and paramedic training. Additionally, 91B medical specialists now designated with a "foxtrot" special skills identifier must be totally familiar with the operation of the aircraft they will soon crew on and the non-MTOE (Modification Table of Organization and Equipment) medical equipment they will work with. The 91B medical specialist series manuals do not address those additional medical and nonmedical skills that must be mastered and practiced by 91BF flight medics. Where, then, do unit commanders turn for reference and guidance for planning and conducting training for these individuals?

The answer is often as nebulous as the problem. To begin with, *how* does a commander train individuals with advanced and specialized skills when no military reference material is available? The 67J Medical Service Corps flight officer unit commanders are not trained to supervise EMT level or higher medical training; nor do they have people authorized by MTOE to provide this supervision. Further, the aircraft knowledge that must be trained, learned and tested is not referenced in any military training manual tailored to meet the needs of the flight medic. Finally, most units participating in MAST programs use emergency care equipment that is not authorized by MTOE. Instead it has been acquired through nonmilitary channels. Assigned medics must be trained in the use of such equipment.

Commanders do have one alternative that provides a partial solution to one of the problems. Currently, the Aeromedical Center at Ft. Rucker, AL, is offering a 4-week training program for 91B personnel allowing certification with the foxtrot special skills identifier

Flight Medic Training

upon successful completion of the course. The program is comprehensive and trains 91B medical specialists in general aircraft operating procedures and the aeromedical aspects of flying.

The problems cited above challenged the 3d Platoon, 498th Medical Company (AA), Ft. Stewart, GA, to develop a viable 91BF training program that addresses the following challenges:

- Develop and maintain a standing operating procedure (SOP) that continues to teach and train EMT level skills.
- Develop and maintain as part of the SOP a section covering the installation, operation and servicing of the specialized medevac equipment unique to the unit.
- Develop and maintain as part of the SOP a section that covers the training of nonmedical general aircrewmember tasks.
- Standardize all of the training to be covered in the SOP under the task, conditions and standards methodology.
- Establish and maintain a medical treatment folder (MTF) for each assigned flight medic listing iterations of tasks required to be conducted on a semiannual basis.
- Develop the program with both comprehensiveness and simplicity in mind.

The program successfully addresses all of the challenges through the implementation of a three-phased program.

The first of the three phases is the **initial entry phase.** All people newly assigned to the unit in the 91B series are placed into the initial entry phase upon completion of inprocessing. In this phase the new "trainees" receive training and testing in a battery of general medical subjects extracted from the 91B skills manual. They also receive training and testing in special tasks developed by the chain of command. These special tasks include the familiarization, installation, operation and servicing of all non-MTOE medical equipment maintained onboard the aircraft and used on medevac missions and nonmedical general crewmember skills. Each task listed is trained and tested under the task, condition, standard methodology and was either extracted from a current military manual (91B skills manual, aircrewmember tasks Maine Army National Guard (MEARNG) Pamphlet 95-2) or was written by the chain of command (special medical skills).

Training and testing of these subjects are accomplished daily under the supervision of the unit medic noncommissioned officer in charge (NCOIC) and the operations officer. The trainees' education is further augmented by assigning them to aircraft scheduled for standby

medevac duty. Riding "shotgun" with medevac qualified crews, the trainees assist in actual missions under the close supervision of the standby crew medic. The initial entry phase is programed to last 3 weeks. Modification of the program length is contingent upon mission requirements or personnel expertise.

The second program phase is the **hospital training phase.** This phase is programed to develop the flight medic trainee in skills that are best learned and more easily practiced in a medical treatment facility. Training in this phase is programed by the medical treatment facility through direct coordination with the unit operations officer and flight medic NCOIC. Doctors, nurses and special technicians supervise the training and testing of each task.

While in the hospital phase, trainees rotate through three clinics, each lasting 1 week in duration. These clinics include the emergency room, the operating room, and the labor and delivery room. As in the initial entry phase, the hospital training phase emphasizes hands-on training.

Upon completion of the hospital training phase, medic trainees are scheduled for emergency medical training if certification has not yet been received. Upon completion of EMT or if already EMT certified, trainees enter the next phase of the medical training program.

The third phase of the program is the **continuation phase.** The trainees at this point are qualified as fully mission capable medics and remain in this phase as long as they are assigned to the unit. Upon entry, a medical treatment folder is established for each medic. The MTF, designed specifically for the flight medic, is tailored after the aviators' aircrew training manual (ATM) folder. The folder lists all of those tasks not found in the 91B series MOS manual that were trained and tested during the initial entry phase. Semiannual iterations of each medical and nonmedical crewmember task are assigned and, like the aviator ATM folder, must be maintained by the individual flight medic. Once the given number of iterations for each task is complete, that task is initialed off by the flight medic NCOIC. The qualified flight medics are then scheduled for standby medevac duty without further supervision of a tenured medic.

Maintenance of EMT skills for each medic in the continuation phase is accomplished through group practice and instruction. Weekly, medics are assigned an advanced skill topic by the flight medic NCOIC to be trained and tested by a selected medic to his or her peers. The training is conducted in accordance with the task, conditions and standards concept. Outlines for the class are prepared by the instructors using the most up-to-date EMT or paramedic literature available. On occasion, doctors or nurses are programed to instruct medics on advanced or innovative procedures to further expand their medical background.

Semiannually, continuation phase medics are rescheduled again for hospital training to ensure that a high proficiency is maintained in those skills previously practiced in the hospital. The duration of the training is based on current mission requirements and medic proficiency.

The continuation phase is further diversified by scheduling medics for seminars, symposiums and conferences offered by the hospital and outside medical agencies when available. Again, the emphasis is to expand the flight medics' backgrounds and to challenge their medical knowledge.

Finally, every medic trains quarterly and requalifies annually in cardiopulmonary resuscitation. This, in conjunction with EMT certification and the three-phased medical training program, allows the unit to maintain all assigned 91BF personnel at the highest state of medical readiness feasible.

The medical training program developed by the 3/498th Medical Company (AA) provides the unit with a viable written tool that has been standardized for the training and testing of advanced and special skills required by 91BF personnel. As the program continues to be used, changes are anticipated to continually increase the degree of accuracy and applicability of the programed subjects.

Editor's note: For details on the courses and for further information contact Captain Hatter at AUTOVON 870-4493/2788.

U.S. Army Communications Command

ATC ACTION LINE

NEW FLIGHT PLAN

The following DOD Flight Plan format will replace the current DD 175 Flight Plan. We expect these to be available for use within a year.

The Aeronautical Services Office solicits your comments and recommendations. Please contact Mr. Helfenberger or Mr. Newport, AUTOVON 284-7773.

DOD FLIGHT PLAN								ATE	AIRCRAFT CALL SIGN	ACFT DESIGNATION/ TD CODE	
TYPE FLT PL			TRUE AIRSPEED	POINT OF DEPARTURE	PROPOSED DEPARTURE TIME (Z)	ALTITUDE	ROUTE OF FLIGHT			TO	ETE
IFR	VFR	DVFR									
REMARKS											
RANK AND HONOR				PASSENGER/CARGO CODE							
HRS FUEL ON BOARD		ALTERNATE AIRFIELD	ETE TO ALTERNATE	NOTAMS	WEATHER	WEIGHT & BALANCE		ACFT SERIAL NUMBER, UNIT, AND HOME STATION			
SIGNATURE OF APPROVING AUTHORITY				SIGNATURE OF PILOT IN COMMAND				REQUEST CLEARANCE AFTER	ACTUAL DEPARTURE TIME	CREW/PASSENGER ☐ ATTACHED ☐ SEE PAX MANIFEST	
DUTY	NAME AND INITIALS					GRADE	SSN		ORGANIZATION/LOCATION		
PILOT IN COMMAND											

Readers are encouraged to address matters concerning air traffic control to:
Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22314

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